EPA WORK ASSIGNMENT NO: 076-2JZZ
EPA CONTRACT NO: 68-W8-0110
FOSTER WHEELER ENVIRONMENTAL CORPORATION
ARCS II PROGRAM

FINAL
SITE INSPECTION PRIORITIZATION (SIP)
A.G.O. ASSOCIATES SITE
HICKSVILLE, NASSAU COUNTY, NEW YORK
CERCLIS NO. NYD986888899

MARCH 1996

VOLUME I OF II

FOSTER WHEELER ENVIRONMENTAL CORPORATION

March 21, 1996
ARCS II-96-076-0012

Ms. Cathy Moyik
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U.S. Environmental Protection Agency
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New York, New York 10007

**SUBJECT: ARCS II PROGRAM - EPA CONTRACT 68-W8-0110
WORK ASSIGNMENT 076-2JZZ - PREREMEDIAL INVESTIGATIONS
SITE INSPECTION PRIORITIZATION (SIP) FINDINGS
A.G.O. ASSOCIATES SITE**

Dear Ms. Moyik:

The following is a summary of the Site Inspection Prioritization evaluation of the A.G.O. Associates site, CERCLIS ID No. NYD986888899, located in Hicksville, Nassau County, Long Island, New York.

General Description and Site History

The former A.G.O. Associates Landfill site is located in a highly industrial and commercial area of West Hicksville, in Nassau County, Long Island, New York (Ref. 3, p. 2 of 32). The site is bordered by West John Street to the north, industrial firms and commercial establishments to the east and west, and the Long Island Railroad to the south (Ref. 3, p. 2 of 32).

Prior to 1963, the property was used as a sand mining operation (Ref. 4, p. 1 of 1). Approximately two-thirds (10 acres) of the 14.4-acre parcel was mined to a depth of approximately 35 to 45 feet below ground surface (bgs) (Ref. 4. p. 1 of 1). This pre-existing area was used for landfilling demolition and construction debris from 1963 until the landfill was closed in 1979 (Ref. 4, p. 1 of 1; Ref. 5, p. 1 of 1). The landfill was unlined and did not have a leachate collection system in place (Ref. 3, p. 22 of 32). The property was purchased in 1963 by a partnership known as A.G.O. Associates (A.G.O.) (Ref. 4, p. 1 of 1). No documentation has been found to determine whether the site was permitted by the NYSDEC to operate as a landfill. Figure 1 shows the site location and Figure 2 depicts the site layout.

Little is documented about site activities between 1963 and 1973 (Ref. 3, p. 9 of 32) In 1973, the Nassau County Department of Health (NCDOH) began monthly inspections at the site (Ref. 6, pp. 1 through 27 of 27). During the inspections, violations such as the improper

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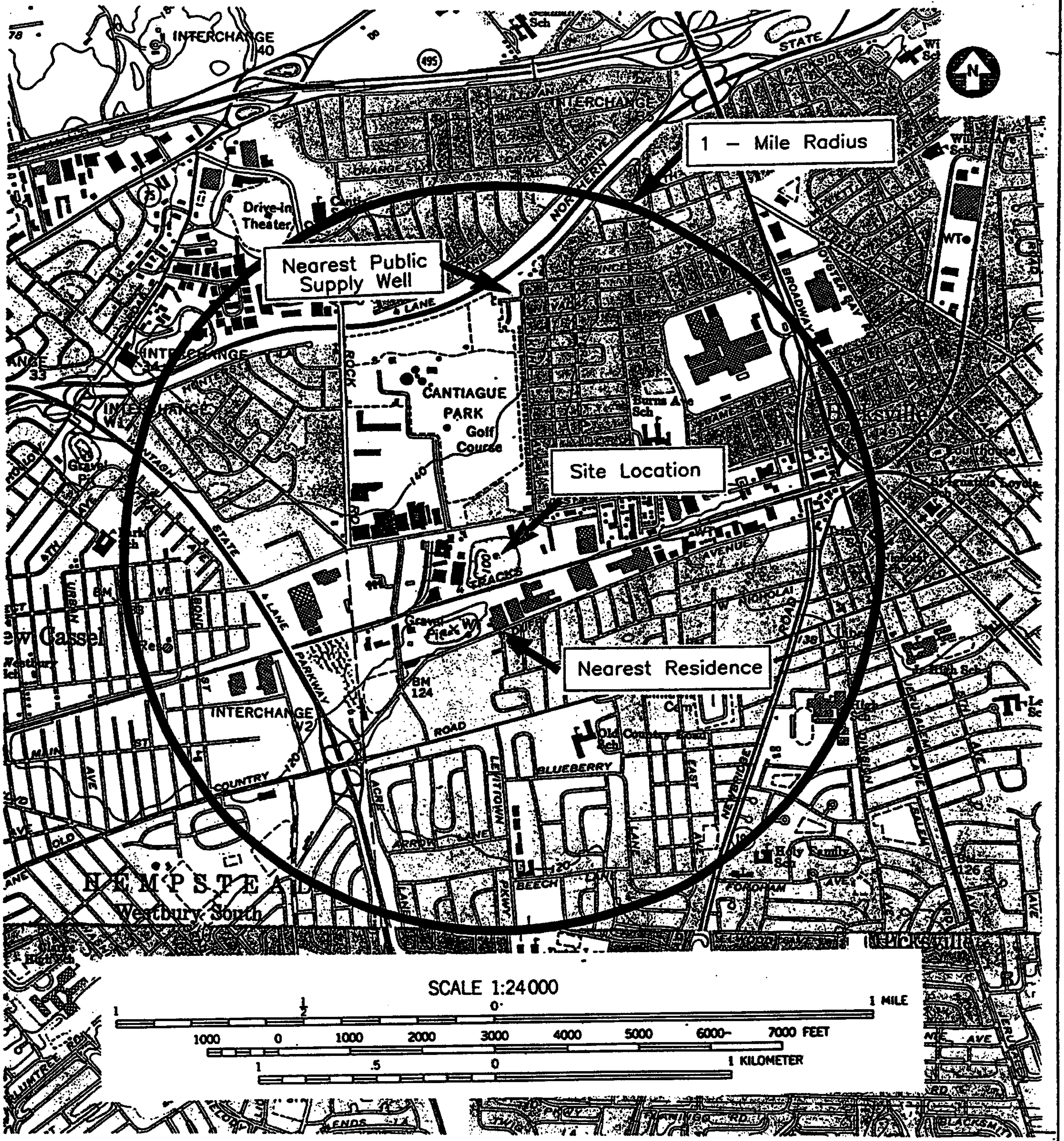


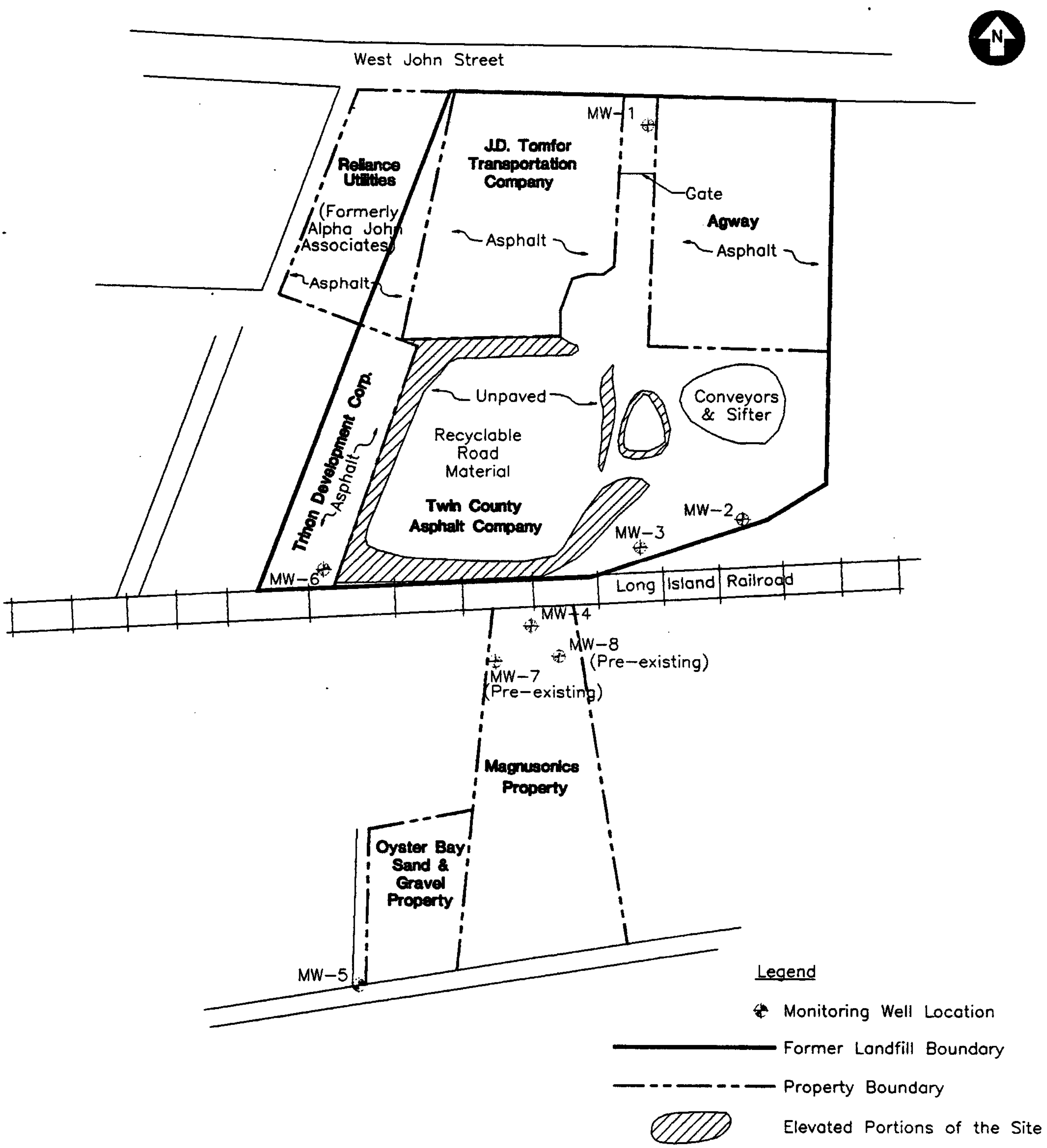
Source: U.S.G.S. 7.5 Minute Series Topographic Maps Quadrangles, Hicksville & Freeport, N.Y. Photorevised 1979

SITE LOCATION MAP

EBASCO SERVICES, INC.

A.G.O. Associates
Hicksville, New York

FIGURE 1



Source: Roux & Associates Inc., Phase II Investigation, AGO Site, September, 1990

Not to Scale

SITE LAYOUT MAP

EBASCO SERVICES, INC.

A.G.O. Associates
Hicksville, Long Island, New York

FIGURE 2

spreading and compaction of refuse, excess salvage material accumulation, smoldering fires, and rodent infestation were documented (Ref. 6, pp. 1 through 27 of 27). During an October 2, 1974 inspection, approximately thirty 55-gallon drums, reportedly containing industrial solvents, lacquers, paint, and paint thinners, were found on site (Ref. 6, p. 14 of 27). The landfill operator was ordered to remove the drums via commercial chemical salvage (Ref. 6, p. 16 of 27). All spillage from the leaking drums onto the ground surface was to be mixed with a chemical absorbent and properly disposed of (Ref. 6, p. 17 of 27). Local residents reported observing wastes other than demolition and construction debris being brought on site (Ref. 6, p. 1 of 27; Ref. 7, p. 1 of 1; Ref. 8, p. 1 of 1).

An October 28, 1974 NCDOH inspection revealed approximately seventy-five 55-gallon drums of industrial chemical wastes, of which only 13 had been removed (Ref. 6, p. 16 of 27). The site operator was ordered to properly dispose of all drums immediately and to provide the NCDOH with disposal documentation (Ref. 6, p. 16 of 27). No documentation of drum disposal was found in the NCDOH and NYSDEC files reviewed by Ebasco. The NCDOH suggested that several of the drums be sampled in order to classify the wastes; however, no analyses were performed (Ref. 6, p. 16 of 27; Ref. 9, p. 1 of 1). On November 18, 1974, more than one hundred 55-gallon drums of industrial chemical wastes were found during a biweekly NCDOH inspection (Ref. 6, p. 18 of 27). By January 7, 1975, all of the 55-gallon drums of industrial wastes had been removed except the sand used as absorbent material for drum spillage (Ref. 6, pp. 20 and 21 of 27). According to an undated NYSDEC Inactive Hazardous Waste Disposal Report, the drums and any spillage were removed in January 1975 (Ref. 10, p. 1 of 1).

On December 7, 1976 the landfill was cited by the Town of Oyster Bay Zoning Department for operating an illegal salvage operation and storing heavy equipment at the site (Ref. 3, p. 10 of 32). A.G.O. Associates complied with the order and removed the salvage material and heavy equipment from the site (Ref. 3, p. 10 of 32).

The landfill continued to operate until January 1979, when it was closed and capped with two feet of soil, and graded to 120 feet above mean sea level (MSL) with a slope of 0 to 2 percent to the south (Ref. 3, pp. 10 and 25 of 32; Ref. 5, p. 1 of 1).

The former landfill property was subdivided and sold to three separate commercial and industrial firms during the 1970s: Agway, Inc. purchased 2.9 acres; Alpha John Associates purchased 0.31 acres; and Trinon Development Corporation purchased 1.31 acres (Ref. 3, p. 5 of 32). Two additional companies, Jay Dee Tomfor Transportation Company, a school bus company, and Twin County Asphalt Recycling Corporation (Twin County Asphalt) purchased 3.01 and 6.98 acres, respectively in 1981 (Ref. 3, pp. 5 and 11 of 32).

On September 16, 1987, the NYSDEC conducted a soil sampling event at the former landfill site (Ref. 13, p. 1 of 1; Ref. 14, p. 1 of 1). Four samples were collected from surface soils located on the property currently owned by Twin County Asphalt (Ref. 13, p. 1 of 1; Ref. 14, p. 1 of 1). The soil samples were analyzed for organics, PCBs, and pesticides, but not for inorganics (Ref. 15, pp. 1 through 17 of 17). Soil samples 1 and 2 were collected from the bottom of two separate soil piles at depths between 6 and 12 inches (Ref. 13, p. 1 of 1). Soil sample 3 was collected one foot into the ground surface near three empty, rusted, above-ground storage tanks located on the southeast portion of the property, near the fence (Ref. 13, p. 1 of 1). Soil sample

4 was collected from the middle of a small ponded area (2 inches of water) located in the middle of Twin County Asphalt's property at a depth of 6 inches bgs (Ref. 13, p. 1 of 1). Because a background soil sample was not collected during the event, sample 4 was chosen to represent background concentrations (Ref 13, p. 1 of 1). The analytical results reported the following contaminants at values greater than three times the background concentration: 4,4'-DDE at 110 parts per billion (ppb); 4,4'-DDT at 430 ppb; 4,4'-DDD at 85 ppb (Ref. 15, pp. 12 and 16 of 17). Heptachlor epoxide (8.4 ppb), 2-butanone (32 ppb), and benzene (11 ppb), were not reported in the background soil sample, but were detected in the other samples (Ref. 15, pp. 6 and 8 of 17).

It should be noted that the samples were obtained from soil that was utilized by another business that had been established after the former landfill had been graded and covered with approximately two feet of cover material; the site had no history of using pesticides; the drums stored at the site were removed without being sampled and the contents of the drums were not characterized (Ref. 3, pp. 5 and 11 of 32; Ref. 5, p. 1 of 1; Ref. 6, p. 16 of 27; Ref. 9, p. 1 of 1; Ref. 10, p. 1 of 1).

A Phase I investigation conducted by Yec, Inc., for the NYSDEC in February 1989, concluded that a Phase II investigation would be required to document groundwater quality beneath the site (Ref. 3, pp. 1, 17, and 18 of 32).

In September 1990 Roux Associates, Inc. (Roux Associates), under contract to Gibbs & Hill, Inc., conducted a Phase II investigation at the former A.G.O. Associates Landfill for the NYSDEC (Ref. 11, p. 4 of 50). As part of the investigation, six monitoring wells (MW-1 through MW-6) were installed by Roux Associates between February 20 and March 6, 1991 (Ref. 11, p. 14 of 50; Ref. 16, pp. 1 through 18 of 18). Split-spoon samples were collected at a depth of every five feet during the installation of the on-site monitoring wells (Ref. 11, p. 8 of 50). The split-spoon samples were scanned with an OVM and no readings above background were recorded (Ref. 11, p. 8 of 50). No surface or subsurface soil samples were collected for chemical analysis during the Phase II investigation (Ref. 11, p. 8 of 50). Groundwater samples were collected from the monitoring wells on March 26 and 27, 1991 (Ref. 11, p. 9 of 50; Ref. 17, pp. 1 through 8 of 8). Two groundwater samples were collected from pre-existing wells (MW-7 and MW-8) located on the Magnusonics property, south of the site (Ref. 11, p. 9 of 50).

The groundwater samples collected by Roux Associates were analyzed in accordance with the January 1990 NYSDEC Contract Laboratory Protocols (CLP) for Target Compound List VOC, SVOCs, pesticides, polychlorinated biphenyls (PCBs), and metals (Ref. 11, p. 9 of 50). The only well that could be identified as a hydraulically upgradient well was MW-1 (Ref. 11, p. 50 of 50). The groundwater flow direction of the Upper Glacial aquifer beneath the site is in a southeasterly direction (Ref. 11, p. 13 of 50). MW-6 is located in the southeastern corner of the former A.G.O. Associates site (Ref. 11, p. 49 of 50).

Using MW-1 as a background well, the following inorganic contaminants were detected at concentrations greater than three times background concentrations: manganese at 2,320 ppb; antimony at 70.7 ppb; cadmium at 16 ppb; lead at 86.6 ppb; magnesium at 22,000 ppb; and manganese at 4,500 ppb (Ref. 11, p. 47 of 50).

Volatile organic compounds were detected in Well MW-6, however, this well is located sidegradient of the landfill and receives very little groundwater flow from the site (Ref. 11, pp. 46 and 50 of 50). The origin of the volatile compounds detected in Well MW-6 appears to be unidentified off-site sources since analytical results of the downgradient monitoring wells did not exhibit detectable levels of volatile organic compounds.

Due to a regional groundwater contamination problem in proximity to the subject site, the NCDOH, with Dvirka and Bartilucci Consulting Engineers, conducted a groundwater study in Nassau County (Ref. 12, p. 3 of 33). As part of the NCDOH groundwater contamination investigation, six monitoring wells (WH-1 through WH-6) installed in the vicinity of the site were sampled between October 1984 and December 1985 (Ref. 3, pp. 3 and 4 of 32; Ref. 12, pp. 25, 26, 28, and 29 of 33). These wells were screened in the shallow Upper Glacial aquifer (Ref. 12, p. 21 of 33). Four previously existing water supply wells and monitoring wells, screened in the deeper Magothy aquifer, were also sampled as part of the investigation (Ref. 12, pp. 30 and 31 of 33). The results of the regional sampling investigation indicated that the Upper Glacial aquifer was contaminated with volatile organic compounds (VOCs) (Ref. 12, pp. 28 and 29 of 33). Based on the regional groundwater flow, the contamination detected in many of the wells could not have resulted from the site (Ref. 11, p. 50 of 50; Ref. 12, p. 16 of 33). The results of the sampling investigation also indicated that the Magothy aquifer was contaminated with VOCs to a depth of at least 265 feet bgs (Ref. 12, p. 31 of 33). One of the industrial wells sampled, well N9341, located upgradient of the subject site, had a total VOC concentration of 2,691 ppb (Ref. 12, pp. 26 and 31 of 33).

The most recurring contaminants reported throughout this sampling event were 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene (Ref. 12, p. 31 of 33). According to the NCDOH report, there are three industries located less than 1/4-mile upgradient of the subject site that report using significant quantities of 1,1,1-trichloroethane (Ref. 12, p. 31 of 33). 1,1,1-trichloroethane is found at highest concentrations in the Upper Glacial aquifer, while trichloroethylene is found at higher concentrations in the deeper Magothy aquifer (Ref. 12, p. 32 of 33).

Two Nassau County groundwater wells (N8956 and N8957), located southwest of the subject site in the Bowling Green Water District and sampled by NCDOH between 1980 and 1986, did not report any detectable concentrations of organic chemicals (Ref. 3, pp. 3 and 15 of 32; Ref. 12, p. 32 of 33).

Evaluation of Existing Information

No documentation has been found indicating that soil samples had been collected and analyzed while the landfill was operating. The landfill was closed in February 1979 and capped with two feet of soil. In September 1987 the NYSDEC collected four soil samples from the Twin County Asphalt property, an asphalt and concrete recycling facility presently operating on top of the old landfill. The analytical results of surface soil samples collected by the NYSDEC in 1987 were used to evaluate the landfill as a source. It is important to note that these were the only analytical results available to evaluate the source. While detectable concentrations of pesticides, VOAs, and SVOAs were detected, the analytical results were not indicative of the actual conditions of the soil during the operation of the landfill; therefore, the sample results were used for screening purposes only. The analytical results of the soil samples did not have the proper Quality Assurance/Quality Control (QA/QC).

The only documentation of waste disposal practices at the old landfill are NCDOH inspection reports and interviews. The landfill accepted mainly construction and demolition debris; however, there were allegations of drums being disposed of at the site. There are no analytical results of soil or waste samples obtained during the operation of the landfill. In 1974, there was documentation of 55-gallon drums of waste liquids at the site. The only documented description of the wastes in the drums were lacquers, paints, paint thinners, and solvents. No manifest information is documented, and no analytical samples of the drums were ever obtained prior to the drums being removed from the site by a commercial chemical salvage company in 1975.

There is a regional groundwater contamination in the vicinity of the site.

Hazard Assessment

Updated and additional information collected to further evaluate the site to determine the need for further CERCLA remedial action included: historical site information, groundwater population data, public water supply information, surface water information, floodplain information, and sensitive environment information.

Source Description

Based on available information, the 14.4-acre landfill was the only source identified at the site. The landfill was owned and operated by A.G.O. Associates from 1963 until it closed in 1979 (Ref. 3, p. 19 of 32). Prior to the landfill's existence, the property operated as a sand mine, with two-thirds of the 14.4-acre site mined to a depth of 35 to 45 feet bgs (Ref. 4, p. 1 of 1). The sand mine used pit to landfill demolition and construction waste. Drums reportedly containing industrial solvents, paints, paint thinners, and lacquers were observed at the site (Ref. 4, p. 1 of 1; Ref. 6, pp. 14 and 18 of 27). The landfill had no liner.

Groundwater Pathway

The groundwater pathway was evaluated on a potential-to-release basis. The former A.G.O. Associates Landfill is underlain by early Paleozoic and/or Precambrian age bedrock that consists of metamorphic and igneous crystalline rocks, and lies at depths ranging from 350 to 950 feet below MSL (Ref. 19, p. 4 of 11). The bedrock is very dense and has a low permeability (Ref. 19, p. 4 of 11). The Magothy-Raritan Formation, the hydrogeologic unit beneath the site, consists of unconsolidated glacial deposits of Pleistocene age, and coastal plain deposits of continental and marine origin of Late Cretaceous age (Ref. 19, p. 4 of 11). The formation is subdivided into three aquifers: the Upper Glacial aquifer, the middle Magothy aquifer, and the lower Raritan Lloyd Sand Member aquifer (Ref. 19, pp. 5 and 6 of 11). The Magothy-Raritan Formation is an interconnected hydraulic system (Ref. 20, pp. 2 and 3 of 3).

The Upper Glacial aquifer consists of deposits of sands, gravels and clays of late Pleistocene and Holocene age (Ref. 19, pp. 5 and 9 of 11). The Upper Glacial aquifer, which comprises the water table in the study area, is between 0 and 320 feet thick (Ref. 19, pp. 5 and 9 of 11). The upper deposits consist of fine to coarse stratified beds of sand and gravel with thin beds of silt and clay that are interbedded with coarse-grained material (Ref. 19, pp. 5 and 9 of 11). The deposits are made up of yellow, brown, and gray outwash (Ref. 19, pp. 5 and 9 of 11). The Upper Glacial aquifer transmits all recharge to the underlying aquifers (Ref. 19, pp. 5 and 9 of 11).

The Magothy aquifer consists of alternating beds and lenses of light gray, fine to coarse sand and sandy clay, with interstitial layers of solid clays and silt, and some lenticular beds of coarse sand and gravel in the lower portion of the unit (Ref. 19, pp. 6 and 7 of 11). The top of the formation ranges from 200 feet below sea level (BSL) to 200 feet above sea level (Ref. 19, p. 7 of 11). The deposits range from 0 to 650 feet in thickness (Ref. 19, p. 7 of 11). The portion of the Magothy Formation that sits just above the Raritan Formation has the thickest and most extensive water-bearing zones (Ref. 19, p. 6 of 11).

The Raritan Formation, of Late Cretaceous age, is composed of an upper clay member and a lower water-bearing sand member called the Lloyd Sand Member (Ref. 19, p. 7 of 11). The clay member runs parallel to the Lloyd Sand and acts as a confining layer between the Lloyd Sand aquifer and the Magothy aquifer, making the Lloyd Sand a true artesian aquifer (Ref. 19, p. 7 of 11). The top of the clay member ranges from 150 to 550 feet BSL in depth and ranges in thickness between 0 and 200 feet (Ref. 19, p. 7 of 11). The clay member consists of light to dark gray, red, white, or yellow clay laminated with silt, and clayey, silty fine sand (Ref. 19, p. 7 of 11). The Raritan clay, despite its low hydraulic conductivity, does not entirely prevent the movement of water between the Magothy and Lloyd aquifers (Ref. 19, p. 7 of 11). The top of the Lloyd Sand Member ranges from 200 to 700 feet BSL (Ref. 19, p. 7 of 11). The deposits range in thickness from 0 to 250 feet (Ref. 19, pp. 6 and 7 of 11). Fine to coarse sands and fine to medium gravels make up the water-bearing zones of the Lloyd Sand (Ref. 19, pp. 6 and 7 of 11). The Lloyd Sand aquifer is a major aquifer for the town of Oyster Bay (Ref. 19, p. 7 of 11). Based on measurements from monitoring wells on and near the site, the groundwater is found at a depth of approximately 49 feet below grade and is flowing in a south to southeast direction (Ref. 11, pp. 13, 45 and 50 of 50).

Groundwater is the only potable source in the area (Ref. 19, p. 2 of 11). Both public and private residential wells, screened in different aquifers, supply drinking water in the study area (Ref. 19, p. 2 of 11). There are 11 different water supply companies located within a 4-mile radius of the site that utilize 80 groundwater supply wells (Ref. 21, pp. 1 through 8 of 8). There are no water supply wells located within a one-half mile radius of the site (Ref. 21, p. 3 of 8; Ref. 25, p. 1 of 1). A total population of 13,454 people are served by 6 municipal supply wells within a 0.5 to 1 mile radius of the site (Ref. 21, p. 6 of 8; Ref. 25, p. 1 of 1). A total population of 60,209 people are served by 23 municipal wells within a 1 to 2 mile radius of the site (Ref. 21, p. 7 of 8; Ref. 23, p. 24 of 25: Ref. 25, p. 1 of 1). A total population of 37,071 people are served by 14 municipal wells located within the 2 to 3 mile radius of the site (Ref. 21, p. 7 of 8; Ref. 23, p. 24 of 25; Ref. 25, p. 1 of 1). A total population of 108,222 people are served by 37 municipal wells located within a 3 to 4 mile radius of the site (Ref. 21, p. 8 of 8; Ref. 23, p. 24 of 25; Ref. 25, p. 1 of 1). All of the public supply wells within a 4-mile radius of the site are screened in the Magothy aquifer, except for one 800 foot deep WWD well, screened in the Lloyd aquifer, and located within a 1 to 2 mile radius of the site (Ref. 21, p. 3 of 8). The nearest public supply wells are located 0.75 miles north and east of the site (Ref. 21, p. 3 of 8; Ref. 25, p. 1 of 1).

All of the public potable supply wells in Nassau County have designated wellhead protection programs designed and implemented by the county, NYSDEC and EPA (Ref. 24, p. 2 of 2).

The total population served by groundwater from private wells within a 4-mile radius is 417, distributed as follows: 0 to 0.25, 0; 0.25 to 0.5, 0; 0.5 to 1, 0; 1 to 2, 79; 2 to 3, 154; 3 to 4, 184 (Ref. 23, pp. 24 and 25 of 25).

A total population of 219,373 rely on private and municipal wells located within four miles of the site for drinking water (Ref. 21, pp. 1 through 8 of 8; Ref. 23, pp. 24 and 25 of 25).

Surface Water Pathway

There are no surface water pathways located within a 2 mile radius of the site (Ref. 25, p. 1 of 1). Therefore, the surface water pathway was not evaluated.

Since the late 1940s, stormwater runoff in Nassau County has been managed by two primary methods (Ref. 26, p. 1 of 1). The first method directs sheet flow into street drains and through underground piping to unlined recharge basins for groundwater infiltration (Ref. 27, p. 1 of 2). This is the primary system for the Hicksville area (Ref. 27, p. 1 of 2). The closest basin to the site (Number 413) is located directly north of the site across West John Street (Ref. 27, p. 1 of 2). Surface water drainage from the site would be directed toward this basin (Ref. 27, p. 1 of 2). The second method routes sheet flow to natural or manmade channels that drain into streams and then tidal areas (Ref. 27, p. 1 of 2). This method is used primarily in southern Nassau County (Ref. 27, p. 2 of 2). Dry wells are used in parking lots in Nassau County for stormwater drainage (Ref. 28, p. 3 of 3).

The site is located in an area of minimal flooding (Ref. 29, pp. 1 and 2 of 2). The landfill, capped with two feet of topsoil in 1979, was graded to 120 feet above MSL with a slope of 0 to 2 percent to the south (Ref. 3, pp. 10 and 25 of 32; Ref. 5, p. 1 of 1).

Soil Exposure Pathway

The nearest residence to the site is located approximately 0.25 miles south of the site (Ref. 11, p. 37 of 50). There is also a restaurant located northeast from Agway across West John Street (Ref. 28, p. 2 of 5). During the site drive-by, Ebasco personnel did not see signs identifying Trinon Development Company or Alpha John Associates; however, there were buildings where these businesses were previously identified (Ref. 28, p. 1 of 5). Agway, Twin County Asphalt, and Jay Dee Tomfor were all identified as being atop the former landfill (Ref. 28, p. 1 of 5). Each of these three companies had secured their properties with a fence and gate (Ref. 28, p. 1 of 5). Twin County's property was completely secured by a fence on all sides except the southeast corner, where approximately 20 feet of fence was knocked down and in disrepair (Ref. 28, p. 2 of 5). There are no day-care centers or schools located within 200 feet of the former landfill site (Ref. 25, p. 1 of 1; Ref. 28, p. 2 of 5). There are workers and buildings on each of the five company properties (Ref. 28, pp. 1 and 2 of 5). During the site drive-by, Ebasco personnel observed that all of the current property owners had paved their lots with asphalt, except for Twin County Asphalt, which had a dirt and gravel-covered lot (Ref. 28, pp. 1, 2, 4 and 5 of 5).

There are no sensitive environments located on-site (Ref. 28, pp. 1 through 3 of 5). The population from 0 to 0.25 mile is 496, from 0.25 to 0.5 mile is 2,488, and 11,888 from 0.5 to 1 mile radius of the site (Ref. 23, pp. 24 and 25 of 25).

Air Pathway

Smoldering fires were observed during NCDOH inspections during the landfill's operation, however, no direct releases of airborne contaminants were recorded from the surface soils (Ref. 6, pp. 1 through 27 of 27; Ref. 30, p. 1 of 1). Therefore, the air pathway was evaluated on a potential-to-release basis.

An air monitoring survey was conducted by Roux Associates during its Phase II investigation of the site on August 7, 1990, to determine air quality in and around the perimeter of the site and to delineate any airborne source contaminants (Ref. 11, p. 7 of 50). Roux Associates utilized the following monitoring devices, the Model OVA128 Century Organic Vapor Analyzer, the 580A portable Organic Vapor Meter, the RM-750 Micro-Roentgen Radiation Monitor, and the Gastech Model 6X-82 Personal Three-Way Gas Alarm (Ref. 11, p. 7 of 50). Throughout the survey, no readings were recorded on any of the instruments (Ref. 11, p. 12 of 50).

The closest residence is approximately 0.25 miles south of the former landfill (Ref. 11, p. 37 of 50). There are approximately 219,148 people living within a 4-mile radius of the site as follows: 0 to 0.25 mile, 496; 0.25 to 0.5 mile, 2,488; 0.5 to 1 mile, 11,888; 1 to 2 miles, 55,355; 2 to 3 miles, 63,444; 3 to 4 miles, 85,477 (Ref. 23, pp. 24 and 25 of 25). The wetland acreage from 0 to 0.25 mile is 0 acres, from 0.25 to 0.5 mile is 0 acres, from 0.5 to 1 mile is 0 acres, from 1 to 2 miles is 2 acres, from 2 to 3 miles is 4 acres, and from 3 to 4 miles is 15 acres (Ref. 31, pp. 1 and 2 of 2). The Few Flower Nutrush, and Orange Fringed Orchis, federally listed threatened plants, are located 1 to 2 miles northeast of the site (Ref. 25, p. 1 of 1; Ref. 36, pp. 2 and 7 of 7). The Tiger Salamander and the Sandplain Gerardia, federally listed endangered species, and the Bushy Rockrose, a federally listed threatened species, are located 2 to 3 miles from the site (Ref. 25, p. 1 of 1; Ref. 36, pp. 4 and 7 of 7). The Little-Leaf Tick-Trefoil, a federally listed threatened species, is located 3 to 4 miles from the site (Ref. 25, p. 1 of 1; Ref. 36, pp. 3 and 7 of 7).

Summary

The existing data and newly collected information are sufficient to evaluate the site. The landfill was closed and capped with a soil cover in 1979. The closed landfill was subdivided and sold to five separate businesses. The majority of the landfill appears to have been located on the southern portion of the property, where the Twin County Asphalt facility is currently located. All but the southeast corner of the Twin County Asphalt property is secured with a fence. The former landfill property is located in a highly commercial and industrial area where organic chemicals detected in regional groundwater are utilized in industrial processes. Available records indicate that the landfill accepted demolition and construction waste. During frequent inspections by the NCDOH, approximately 100 drums reportedly containing industrial solvents, paints, paint thinners, and lacquers were found stored on the open ground at the landfill in November 1974. All of the drums were removed by January 1975. During inspections, the landfill was cited for several violations, such as the improper spreading and compaction of refuse, excess salvage material accumulation, smoldering fires, and rodent infestation.

No documentation has been found in available file information that suggests environmental samples were collected during the landfill's operation. Groundwater samples collected by the NCDOH in 1985 from monitoring wells located in proximity to the site indicated that the Upper Glacial aquifer and the middle Magothy aquifer (to a depth of 265 feet bgs) were contaminated with VOCs. In 1990, Roux Associates collected groundwater samples from monitoring wells placed on and around the site borders. The results of both sampling events, however, cannot be attributed to the site for the following reasons: the site is located in a highly industrial and commercial area of Long Island; the wells sampled by the NCDOH were located between 0.25 and 1 mile from the site; the downgradient monitoring wells installed by Roux Associates were not strategically placed to preclude interference from other sources proximal to the site; and the drums found on the site property were never sampled to identify the contents, therefore, none of the contaminants found in either sampling event can be attributed to the site.

In September 1987 the NYSDEC collected four surface soil samples from the Twin County property. Detectable concentrations of pesticides, VOCs, and SVOCs were reported. A background soil sample was not collected. Because the samples were obtained after the landfill had been closed and capped with two feet of soil, the sample results were not indicative of conditions at the landfill during its operation.

Groundwater in the vicinity of the site is used for drinking water purposes. Public water supply companies and private residences have wells screened in both the Glacial and Magothy aquifers. A total population of 416 utilized private domestic wells, screened in the aquifers of concern, for their potable supply within a 4-mile radius of the site. The nearest private well was documented to be approximately one mile from the site. The nearest public supply well was documented to be approximately 0.75 of a mile north of the site. Eleven water supply companies utilize 80 wells within a 4-mile radius of the site to supply potable water to a population of approximately 218,956. All of the wells are screened in the Magothy aquifer, with the exception of one well utilized by the WWD, which is screened in the Lloyd aquifer.

There are no surface water bodies located within a two-mile radius of the site. There are no areas of observed contamination within 200 feet of any residence, schools, day-care centers, or terrestrial sensitive environments.

No documented releases to air have occurred. Approximately 219,148 people live within a four-mile radius of the site. There are several federally threatened and endangered species within a 4 mile radius of the site.

Prepared by:

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REFERENCES

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2. U.S. Environmental Protection Agency, Superfund Chemical Data Matrix (SCDM), EPA 9360.4-18, July 1994, as incorporated in the PREscore Software, Version 3.0, Publication 9450.2200, August 1994.

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REFERENCE 1

Reference 1
p. 1 of 1

federal register

Friday
December 14, 1990

Part II

Environmental Protection Agency

40 CFR Part 300
Hazard Ranking System; Final Rule

REFERENCE 2

Reference 2
p. 1 of 1

United States
Environmental Protection
Agency

Solid Waste And
Emergency Response
(OS-240)

9360.4-18
EPA ~~9345.1-13~~
~~November 1991~~
July 1994

EPA

Superfund Chemical Data Matrix

Printed on Recycled Paper

REFERENCE 3

HKT. 5, 1/32

ENGINEERING INVESTGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE I INVESTIGATION

AGO Associates

Site No. 130029

Hicksville, Nassau County

September, 1989

New York State Department of Environmental Conservation

50 WOLF ROAD, ALBANY, NEW YORK 12233

Thomas C. Jorling, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., Director

Prepared by:

YEC, INC.

UNDER CONTRACT TO

LAWLER, MATUSKY & SKELLY ENGINEERS

KC 2, 702

1.0 EXECUTIVE SUMMARY

The A.G.O. Associates Site (NYSDEC I.D # 130029) is located in west Hicksville, Nassau County, New York in a highly industrial and commercial area concentrated along West John Street and Duffy Avenue which run east and west along central Hicksville and adjacent to Long Island Railroad (see Figure 1-1). The site has an areal extent of 14.4 acres and lies on relatively flat glacial terrain in central Nassau County, Long Island. The property is bordered by West John Street on the northern side and the Long Island Railroad on the southern side. Industrial firms and commercial establishments are located to the east and west.

The facility currently consists of five separate parcels owned by commercial and industrial firms. The bulk of the property is owned by Twin County Asphalt Corporation and consists of a rear lot and entrance off West John Street totalling 6.9 acres. To the east of the narrow entrance to the Twin County Asphalt Recycling operation is a 2.9 acre facility owned by Agway, Inc.. A school bus company, J.D. Tomfor Transportation Company own the 3 acre plot to the west of the entrance. The two remaining strips of the original property on the western side are owned by Alpha John Associates and Trinon Development Corporation (see Figure 1-2 and Figure 1-3).

The facility was purchased in 1963 by A.G.O. Associates, a partnership formed by Charles Andromidas, Morris and Aaron Green and Jimmy O' Connell. A large, previously existing sand pit which occupied approximately two thirds of the parcel was used for the landfilling of construction and demolition debris. In 1973, Nassau County Department of Health (NCDOH) began inspecting the landfill on a monthly basis. During the October, 1974 inspection by NCDOH, approximately one hundred 55 gallon drums of solvents, lacquers, thinners were discovered at the site. The drums containing industrial solvents, paints, lacquers and thinners were ordered to be removed from the facility via commercial chemical salvage. Spillage from the drums was to be mixed with sand or suitable wet chemical absorbent and also removed from the landfill. By January, 1975, all drums had been disposed of. Filling and leveling of demolition material and salvaging of iron, steel and aluminum was continued at the site until its closure in January, 1979. Landfilling ceased, a final topsoil cover was applied and the property was graded as noted in the final weekly site inspections by NCDOH.

In 1987, New York State Department of Environmental Conservation (NYSDEC) conducted a sampling program during which four soil samples were recovered from the surficial soils and materials on site. Analysis of the samples indicated low levels of pesticides, organics and volatile organics.

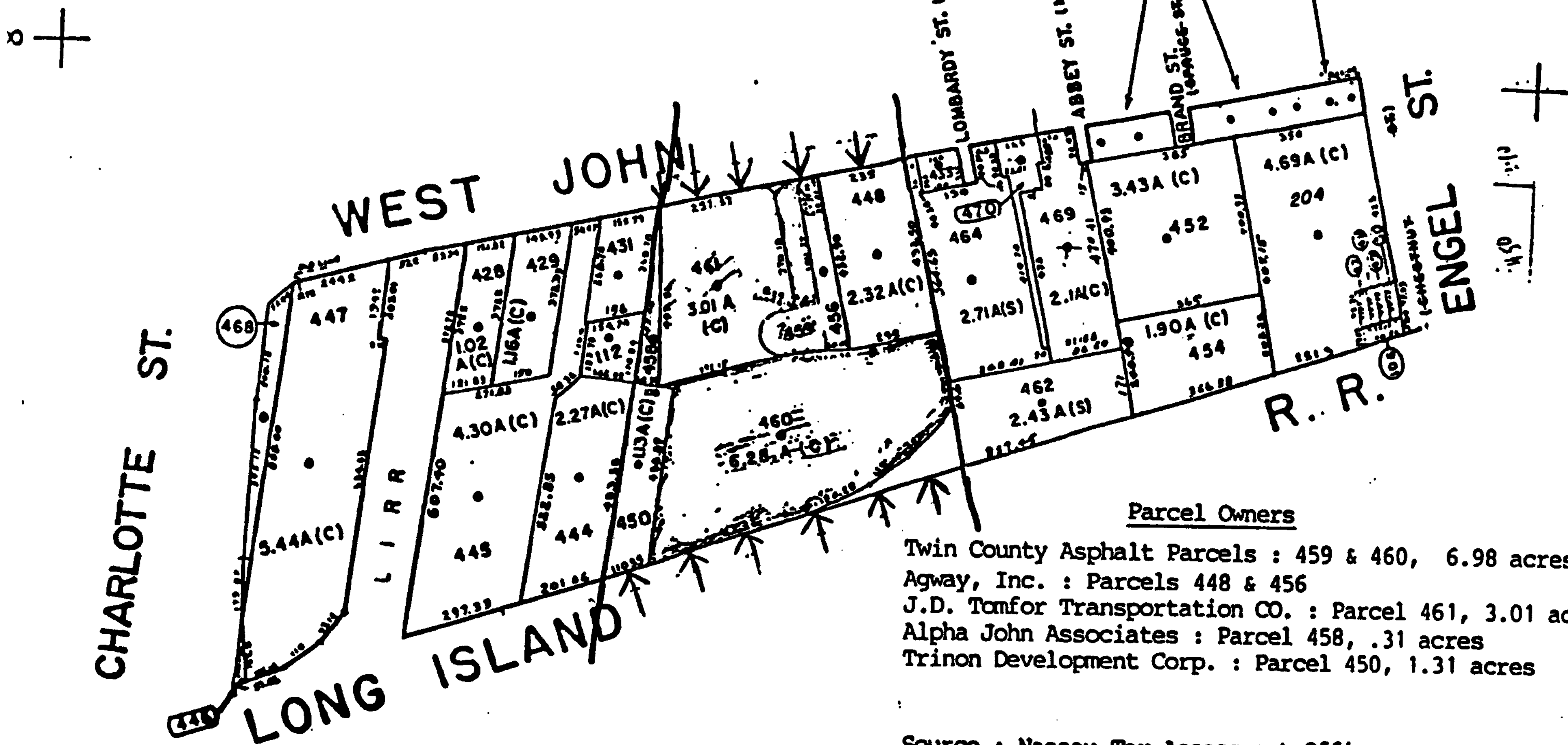
In 1986, NCDOH and Dvirka and Bartilucci Consulting Engineers, Syosset, New York installed six monitoring wells in west Hicksville, as part of a regional groundwater quality study in Nassau County (Ref. 1). The wells were installed between Duffy

Ref. 3, 4102

Avenue and Old Country Road downgradient of the west Hicksville industrial area. The sampling results of these wells and four existing Nassau County wells indicated significant (maximum of 6,800 ug/l) volatile organic contaminants (Ref. 1) and extensive contamination. The shallow wells exhibited considerable levels of total volatile organics. Based on data obtained from deep monitoring wells in the area, it was determined that contamination (approximately 2,700 ug/l of total organics) had migrated into the Magothy aquifer up to 265 feet below grade. The report identifies a number of potential sources located along Duffy Avenue and West John Street including complaints concerning organic chemicals filed with NCDOH and industrial firms using and handling organic chemicals.

Although contamination has been reported in the wells downgradient of the site, connections have not been established between the contamination and past activities at the AGO Associates landfill operation. There is a lack of information on landfill operations between 1963 and 1973. Site inspection reports by NCDOH after 1973 document that commercial, industrial and agricultural wastes were also landfilled at the facility. This correlates with accounts from area residents who remember the "AGO dump".

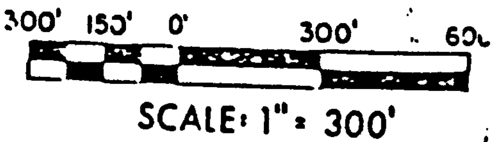
A preliminary HRS score was completed for the site. The preliminary Migration Score (S_M) was 20.5;(Ground Water Route



Parcel Owners

Twin County Asphalt Parcels : 459 & 460, 6.98 acres
Agway, Inc. : Parcels 448 & 456
J.D. Tomfor Transportation CO. : Parcel 461, 3.01 acres
Alpha John Associates : Parcel 458, .31 acres
Trinon Development Corp. : Parcel 450, 1.31 acres

Source : Nassau Tax Assessment Office (county)



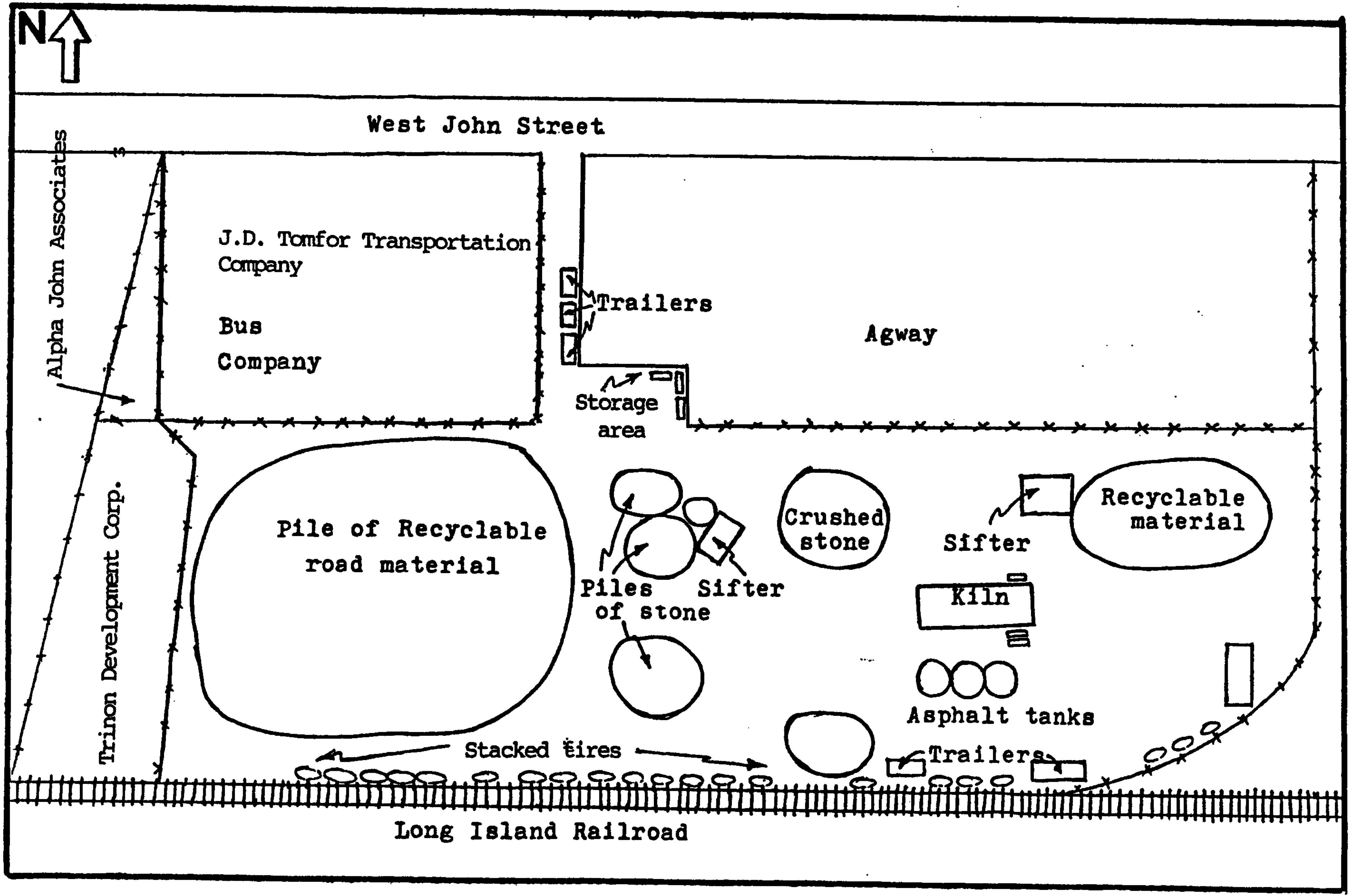
↑ = outline parcels of concern

FIGURE 1-2

NASSAU COUNT
LAND & TAX MA
DEPARTMENT OF ASSESSMENT
ABE SELDIN
CHAIRMAN, BOARD OF ASSESSORS
MAP ADOPTED

SEC. 11
BLK. 325

Ket. 5, 5132



A.G.O. ASSOCIATES
HICKSVILLE, NEW YORK

FIGURE 1-3 Site Sketch
(not to scale)

Kct.5, 7132

2.0 PURPOSE/OBJECTIVES

Under contract to Lawler, Matusky and Skelly Engineers (LMS) which is in turn under contract to New York State Department of Environmental Conservation (NYSDEC), YEC, Inc. conducted this Phase I Investigation at AGO Associates Site. The purpose of this Phase I Investigation is to provide a preliminary evaluation of the potential hazardous waste present at the site, to estimate the potential pollutant migration pathways leading off the site and to determine the natural resources or extent of population that might be affected by the pollutants. This assessment will be used to determine what actions, if any, should be conducted at the site.

The objectives of the project were to: (1) compile existing information about the site from federal, state, county, municipal and private records; (2) obtain environmental data needed to determine if the site poses a significant threat to the environment; (3) interview site owners, operators and other groups or individuals knowledgeable of site operations; (4) conduct a site inspection to observe current conditions; (5) provide a preliminary scoring of the site utilizing the Mitre Corporation's Hazard Ranking System (HRS); and (6) prepare the Phase I Report in accordance with NYSDEC's Phase I report format.

Ret. 3, 8[illegible]

3.0 SCOPE OF WORK

The Phase I effort involved the following tasks:

- A review of the available information from state, county, municipal and federal files;
- Interviews with individuals knowledgeable about the site; and
- Physical inspection of the site that included photodocumentation and air monitoring using a HNu photoioization detector.

Photographs taken during the site inspection on February 3, 1989 are included in Appendix A. All observations were recorded in a field log book and are reported in the United States Environmental Protection Agency (USEPA) Site Inspection Report form 2070-13 as presented in Section 5.5 of this report. The sources of information contacted during the investigation are listed in Table 3-1.

It should also be noted that while there is a complex groundwater contamination problem in west Hicksville, the scope of this Phase I effort is limited only to the former AGO Associates site.

4.0 SITE ASSESSMENT

4.1 SITE HISTORY

Landfilling at the A.G.O. Associates site began around 1963 when the property was purchased by the partnership of Charles Andromidas, Morris and Aaron Green and Jimmy O' Connell, thereafter known as A.G.O. Associates.

According to Mr. Charles Andromidas, a sand mining operation owned the parcel prior to 1963. At the time of the property transfer, a large pit, approximately 35 to 45 feet deep occupied two thirds of the 14.4 acre parcel (Appendix C, Ref.1 and 2).

There is an absence of background information on landfill operations during the first 10 years of operation. In 1973, Nassau County Department of Health (NCDOH) began inspecting the facility on a monthly basis. Construction and demolition materials were landfilled directly into the open sand pit (Appendix C, Ref. 1). Mr. William Portney, the general foreman was in charge of filling and leveling incoming debris and the upkeep of the facility throughout the lifetime of the landfill. Inspection reports by NCDOH document that the refuse landfilled also included industrial, commercial and agricultural wastes (Ref. 8). During the period of operation of the landfill, it was known to area residents as the "AGO dump" (Appendix C, Ref. 3,4 and 5). Mr. Swedella, a local resident, stated that although a sign at the entrance of the facility advertised for "clean fill", truck loads of all kinds of wastes were landfilled there

(Appendix C, Ref. 3).

On October 2, 1974, several dozen drums of industrial solvents, lacquers, and thinners were discovered at the facility by NCDOH. During the subsequent weekly inspections, a total of one hundred, 55 gallon drums were estimated to have been found at several locations on the site. The drums were ordered to be removed via commercial chemical salvage and spillage to be mixed with sand or suitable wet chemical absorbent and removed from the landfill. By January, 1975, all drums had been disposed of (Ref. 8).

During the 1970's, a number of violations of the criteria for operation of refuse disposal areas were noted by NCDOH. Improper spreading and compaction of refuse and the constant over accumulation of salvage material were cited as violations. Outbreaks of smoldering fires and rodent infestation were a problem (Ref. 8). In 1976, a summons was served by the Town of Oyster Bay charging A.G.O. Associates with illegal salvage operations and storage of heavy equipment at the site. Salvage was then removed from the northwestern corner and the area excavated for fill (Ref. 8).

The facility was finally closed in January, 1979. During the final months before closure, the landfill was graded to present elevation and covered with 2 feet of topsoil. It is estimated that the sale of the plots currently owned by Agway, Inc., Alpha

John Associates and Trinon Development Corporation occurred in the 1970s prior to the closure. In 1981, the remaining plots were sold to J.D. Tomfor Transportation Company and Twin County Asphalt Corporation (Appendix C, Ref. 2).

A list of property owners, businesses and their addresses, located on or near the site are as follows:

Twin County Asphalt Corporation
Twin County Asphalt Recycling Corporation
449 West John Street
Hicksville, N.Y. 11801
Parcel: 449 West John Street (6.98 acres)

Agway, Inc.
499 West John Street
Hicksville, N.Y. 11801
Parcel: Parcel immediately east of the narrow entrance to 449 West John Street (2.93 acres)

J.D. Tomfor Transportation Company
445 West John Street
Hicksville, N.Y. 11801
Parcel: Parcel immediately west of the narrow entrance to 449 West John Street (3.01 acres)

Alpha John Associates
Address Unknown
Parcel: Parcel immediately west of J.D. Tomfor Transportation Co. (0.31 acres)

Trinon Development Corporation
Address Unknown
Parcel: Parcel immediately west of the rear lot of 449 West John Street (1.31 acres)

4.2 TOPOGRAPHY

West Hicksville is located just east of the geographic center of Nassau County which is part of the Coastal Plain Physiographic Province (Ref.7). The undulating hills to the north of the site

NCT.O, 12/..

were deposited as a terminal moraine. The property occupies 14.4 acres, two thirds of which was originally a 35 to 45 feet deep sand pit (Ref. 2 and Appendix C, Ref. 13). The excavation is featured on the USGS topographic map, Hicksville SE/4 Quadrangle (1967) (Ref. 3). It has since been graded to an elevation of 120 feet above mean sea level (MSL). The facility slope is 0 - 2 percent (Ref. 17). It lies on a flat outwash plain which slopes gently southwards reaching tidal areas and marsh at sea level.

The AGO Associates Site is surrounded by many commercial establishments located between West John Street and the Long Island Railroad. The nearest residential area in west Hicksville is south of Old Country Road and has a density of approximately 5 -10 dwellings per acre (Ref.1).

There are a number of small unnamed ponds upgradient of the site within a 3-mile radius including Old Westbury Pond (Ref. 3). Water for drinking and industrial use is obtained from a number of wells in west Hicksville. The nearest public supply well, N9463 is located approximately 1-mile east of the site and is 638 feet deep. To the south and southwest of the site are two industrial wells N9212 and N8880 and two supply wells owned by Bowling Green Water District, N8956 and N8957 (Ref. 13). There are 28 public water supply wells located within a 3-mile radius of the site. These are owned by Bethpage(1), Bowling Green (1), Hicksville (8), Jericho (7), Levittown (4), Plainview (2) and Westbury (4) Water Districts and Old Westbury Village (1) (Ref.

Kct. 3, 13132

5.0 PRELIMINARY APPLICATION OF THE HRS

5.1 NARRATIVE SUMMARY

The AGO Associates site (NYSDEC I.D.# 130029) occupies 14.4 acres between West John Street and Long Island Railroad in Hicksville, New York (Figure 5-1). The site currently consists of five separate parcels owned by industrial and commercial firms.

From 1963 to 1979, the parcel was used for landfilling construction and demolition debris. The material was filled directly into a previously existing 35 to 45 feet deep sand pit which occupied two thirds of the parcel.

In October, 1974, approximately one hundred 55-gallon drums of industrial solvents, paints, lacquers and thinners were discovered at the facility. The drums and associated spillage were cleaned up and disposed of January, 1975.

In 1987, NYSDEC sampled surficial soils and piles of material onsite. The results of the four soil samples indicated low levels of pesticides and organic chemicals were present.

Residential areas are located approximately a quarter of a mile to the south along Old Country Road. There are 28 public water supply wells within a 3-mile radius of the site. Drinking water for the immediate area is served by a number of groundwater wells owned by Hicksville Water District. There are number of small unnamed ponds and Old Westbury pond located upgradient of the site. No contaminants were detected during onsite air monitoring.

TABLE 4-3
SUMMARY OF ANALYTICAL RESULTS

INVESTIGATION OF CONTAMINATED AQUIFER
SEGMENTS IN NASSAU COUNTY, NEW YORK

WELL I.D.	N8880	N9341
DEPTH (Feet)	247	265
COMPOUND	CONCENTRATION IN UG/L	
1,1,2-trichlorotrifluoroethane	6	21
c & t-1,2-dichloroethylene		440
1,1-dichloroethane		66
Chloroform		2
1,1,1-trichloroethane	16	16
Carbon tetrachloride		2
Trichloroethylene	150	1600
Tetrachloroethylene	3	260
Bromoform		1
Ethylbenzene		57
Xylene		95
Dichlorobenzene		130
Total	175	2690

265 feet below ground surface located less than a quarter of a mile to the north west of the site. Another industrial well N8880, 247 feet deep and located approximately a quarter of a mile to the southwest of the site, was found to have high levels of total organic chemicals including up to 150 ug/l of trichloroethylene. Because well N9341 is not directly upgradient of well N8880, contamination may originate from different sources.

Two Nassau County wells located southwest of the site in Bowling Green Water District sampled by NCDOH between 1980 and 1986 tested negative for organic chemicals (Ref. 16).

Air monitoring was conducted during the site visit and during the September, 1987 sampling effort by NYSDEC. No airborne contaminants were detected on both occasions (Ref.17 and Appendix C, Ref.7).

In conclusion, the data available indicates significant contamination of the upper glacial aquifer up to at least 265 feet below ground surface downgradient of the west Hicksville area. However, there is no definitive data available that would identify AGO Associates site as the source of contamination in this area.

TABLE 4-2
SUMMARY OF ANALYTICAL RESULTS

INVESTIGATION OF CONTAMINATED AQUIFER
SEGMENTS IN NASSAU COUNTY, NEW YORK

WELL I.D. DEPTH(FEET)	WH-1 60	WH-2 63	WH-3 64	WH-4 66	WH-5 72	WH-6 64
COMPOUND			CONCENTRATION IN UG/L*			
1,1,2-Trichlorofluoroethane			520			11
1,1,1-Trichloroethane		16	5400	2	29	170
Trichloroethylene			900	1	23	96
Tetrachloroethylene			23		620	9
Trichlorofluoroethane						2
c & 1 t-1,2-Dichloroethylene					36	25
1,1-Dichloroethane					25	44
Xylene	12					15
Chloroform			1	1		
Total	12	16	6844	4	733	372

* Values reported are the highest concentration recorded over the sampling period 10/16/84 to 12/18/85 (Dvirka and Bartilucci Consulting Engineers and NCDOH).

6.0 ASSESSMENT OF DATA ADEQUACIES

The available data on the AGO Associates site has proven to be inadequate in computing a preliminary HRS score. Although surficial soil samples were recovered from the site for analysis, a groundwater sampling program has not been conducted at the site. A release of significant quantities of volatile organic chemicals to the groundwater from an unknown source is indicated by the high concentrations detected in a regional sampling program conducted by Dvirka and Bartilucci Consulting Engineers and Nassau County Department of Health (NC DOH) downgradient of the site in west Hicksville. All samples collected during the period of October 1984 to December 1985 were analyzed only for organic chemicals. There has been no groundwater sampling program conducted at this site and this prohibits any characterization of the wastes or hazardous substances present in the groundwater, attributable to the facility.

In order to provide a complete HRS score, a release of contaminants to the groundwater from this site should be investigated. Thus a Phase II investigative program is recommended which should include the following:

1. Installation of monitoring wells for the collection of groundwater samples (including upgradient/background samples) for analysis.

2. Sampling of soils for analysis.

Ket.3, 18/32

Samples should be analyzed for Target Compound List (TCL) inorganics, organics, pesticides and PCB.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

II. SITE NAME AND LOCATION

Site Name (Legal, common, or descriptive name of site)	02 Street, Route No., or Specific Location Identifier
AGO Associates	449 West John Street

03 City	04 State	05 Zip Code	06 County	07 County Code	08 Cong Dist
Hicksville	NY	11753	Nassau		

09 Coordinates
Latitude 40° 45' 53" .
Longitude 72° 32' 36" .

10 Type of Ownership (Check one)
[X] A. Private [ ] B. Federal ______ [ ] C. State [ ] D. County
[ ] E. Municipal [ ] F. Other ______ [ ] G. Unknown

III. INSPECTION INFORMATION

Date of Inspection	02 Site Status	03 Years of Operation
2 / 3 /89 (Month Day Year)	[ ] Active [X] Inactive	1963 (Beginning Year) | 1979 (Ending Year) [ ] Unknown

04 Agency Performing Inspection (Check all that apply)
[ ] A. EPA [ ] B. EPA Contractor ______ (Name of Firm) [ ] C. Municipal [ ] D. Municipal Contractor ______ (Name of Firm)
[ ] E. State [X] F. State Contractor YEC, Inc. (Name of Firm) [ ] G. Other ______ (Specify)

Chief Inspector	06 Title	07 Organization	08 Telephone No.
			( )

09 Other Inspectors	10 Title	11 Organization	12 Telephone No.
Marie Mc Donnell	Geologist	YEC, Inc.	(914) 268-3203
Gregory Fabijanic	Engineer	YEC, Inc.	(914) 268-3203
			( )
			( )
			( )

Site Representatives Interviewed	14 Title	15 Address	16 Telephone No.
Richard Sangiovanni	Asphalt Plant Manager	Twin County Asphalt Corp. 449 West John Street	(516) 932-1000
Richie"	Visitor		( )
			( )
			( )
			( )

Access Gained By (Check one)	18 Time of Inspection	19 Weather Conditions
[X] Permission [ ] Warrant	10:00 hrs	Wet, 40°F

. INFORMATION AVAILABLE FROM

Contact	02 Of (Agency/Organization)	03 Telephone No.
		( )

Person Responsible for Site Inspection Form	05 Agency	06 Organization	07 Telephone No.	08 Date
Marie Mc Donnell		YEC, Inc.	(914) 268-3203	2 / 6 /89 (Month Day Year)

Form 2070-13 (7-81) 5610(

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 2 - WASTE INFORMATION

01 State	02 Site Numbe
	NEW

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 Physical States (Check all that apply)

[ ] A. Solid [ ] E. Slurry
[ ] B. Powder, Fines [x] F. Liquid
[ ] C. Sludge [ ] G. Gas
[ ] D. Other ______ (Specify)

02 Waste Quantity at Site (Measure of waste quantities must be independent)

Tons ______
Cubic Yards ______
No. of Drums 100

03 Waste Characteristics (Check all that apply)

[X] A. Toxic [ ] H. Ignitable
[ ] B. Corrosive [ ] I. Highly volati
[ ] C. Radioactive [ ] J. Explosive
[x] D. Persistent [ ] K. Reactive
[ ] E. Soluble [ ] L. Incompatible
[ ] F. Infectious [ ] M. Not applicabl
[ ] G. Flammable

III. WASTE TYPE

Category	Substance Name	01 Gross Amount	02 Unit of Measure	03 Comments
SLU	Sludge			
OLW	Oily waste			
SOL	Solvents			
PSD	Pesticides	unknown		NYS DEC Sampling, 1987
OCC.	Other organic chemicals	unknown		(Low levels of pesticides
IOC	Inorganic chemicals			and organic compounds detected
ACD	Acids			Source(s) of contamination
BAS	Bases			and amount of wastes unknown)
MES	Heavy Metals			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 Category	02 Substance Name	03 CAS Number	04 Storage/Disposal Method	05 Concentration	06 Measure of Concentrati
PSD	4,4'-DDD	75-54-8		85.0	ug/kg
PSD	4,4'-DDE	72-55-9		110.0	ug/kg
PSD	4,4'-DDT	50-29-3		430.0	ug/kg
PSD	Heptachlor Epoxide	1024-57-3		8.4	ug/kg
OCC	Benzene	71-43-2		11.0	ug/kg
OCC	2-Butanone	78-93-3		32.0	ug/kg
OCC	Fluoranthene	206-44-0		520.0	ug/kg
OCC	Pyrene	129-00-0		480.0	ug/kg

V. FEEDSTOCKS (See Appendix for CAS Numbers)

Category	01 Feedstock Name	02 CAS Number	Category	01 Feedstock Name	02 CAS Number
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Analysis of soil samples by Nanco Laboratories, Inc., 1987

561

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. Groundwater Contamination — 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected 120,000 — 04 Narrative Description:

Potential exists for groundwater contamination due to the spillage of some of 100 drums of industrial solvents, lacquers and thinners found at the facility.

01 [ ] B. Surface Water Contamination — 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ — 04 Narrative Description:

There are no surface water bodies downgradient of the site within a 3-mile radius.

01 [ ] C. Contamination of Air — 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ — 04 Narrative Description:

None detected

01 [ ] D. Fire/Explosive Conditions — 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ — 04 Narrative Description:

None reported or detected.

01 [X] E. Direct Contact — 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected ______ — 04 Narrative Description:

Surficial soils are contaminated with low levels of pesticides and organic compounds. Potential exists for direct contact to workers and visitors at the firms presently occupying the facility.

01 [X] F. Contamination of Soil — 02 [X] Observed (Date 1987) [ ] Potential [ ] Alleged
03 Area Potentially Affected unknown (Acres) — 04 Narrative Description:

Analysis of soils indicate the presence of low levels of pesticides and organic compounds.

01 [X] G. Drinking Water Contamination — 02 [ ] Observed (Date ______) [X] Potential [ ] Alleged
03 Population Potentially Affected 120,000 — 04 Narrative Description:

Potential exists for contamination of downgradient drinking water wells due to the spillage of some of 100 drums of industrial solvents, lacquers, and thinners found at the facility.

01 [ ] H. Worker Exposure/Injury — 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Workers Potentially Affected ______ — 04 Narrative Description:

None reported

01 [ ] I. Population Exposure/Injury — 02 [ ] Observed (Date ______) [ ] Potential [ ] Alleged
03 Population Potentially Affected ______ — 04 Narrative Description:

None reported

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 State	02 Site Number
	NEW

II. HAZARDOUS CONDITIONS AND INCIDENTS (Cont.)

01 [ ] J. Damage to Flora — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported or observed.

01 [ ] K. Damage to Fauna — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported or observed.

01 [ ] L. Contamination of Food Chain — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported or observed.

01 [x] M. Unstable Containment of Wastes (Spills/Runoff/Standing liquids, Leaking drums) — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
03 Population Potentially Affected ________ 04 Narrative Description:

Landfill has no liner or leachate collection system. Cover is adequate. Site has been graded to current elevation. In Oct., 1974, 100, 55 gal. drums of assorted toxic fluids and associated spillage were removed from the site.

01 [ ] N. Damage to Offsite Property — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported

01 [ ] O. Contamination of Sewers, Storm/Drains, WWTPs — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported.

01 [ ] P. Illegal/Unauthorized Dumping — 02 [ ] Observed (Date ________) [ ] Potential [ ] Alleged
04 Narrative Description:

None reported

05 Description of Any Other Known, Potential, or Alleged Hazards

None reported.

III. TOTAL POPULATION POTENTIALLY AFFECTED 130,000

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

YEC Site Inspection

NYS DEC and NC DOH Files

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

II. PERMIT INFORMATION

01 Type of Permit Issued (Check all that apply)	02 Permit Number	03 Date Issued	04 Expiration Date	05 Comments
[ ] A. NPDES				
[ ] B. UIC				
[ ] C. AIR				
[ ] D. RCRA				
[ ] E. RCRA Interim Status				
[ ] F. SPCC Plan				
[ ] G. State (Specify)				
[ ] H. Local (Specify)				
[ ] I. Other (Specify)				
[ ] J. None				

III. SITE DESCRIPTION

01 Storage Disposal (Check all that apply)	02 Amount	03 Unit of Measure	04 Treatment (Check all that apply)	05 Other
[ ] A. Surface Impoundment			[ ] A. Incineration	[ ] A. Buildings On Site
[ ] B. Piles			[ ] B. Underground Injection	
[ ] C. Drums, Above Ground			[ ] C. Chemical/Physical	
[ ] D. Tank, Above Ground			[ ] D. Biological	
[ ] E. Tank, Below Ground			[ ] E. Waste Oil Processing	
[X] F. Landfill	10	acres	[ ] F. Solvent Recovery	06 Area of Site
[ ] G. Landfarm			[ ] G. Other Recycling Recovery	
[ ] H. Open Dump			[ ] H. Other ______ (Specify)	14.4 Acres
[ ] I. Other ______ (Specify)				

07 Comments

Landfilling occurred into previously existing pit which occupied 2/3 of the total area. No evidence of landfilling was noted during site inspection.

IV. CONTAINMENT

01 Containment of Wastes (Check one)

[ ] A. Adequate, Secure   [ ] B. Moderate   [X] C. Inadequate, Poor   [ ] D. Insecure, Unsound, Dangerous

02 Description of Drums, Diking, Liners, Barriers, etc.

Landfill has no liner or leachate collection system. Drums found at the facility assumed to be leaking since spillage resulted.

V. ACCESSIBILITY

01 Waste Easily Accessible: [ ] Yes [X] No

02 Comments:

Landfill cover is adequate. Site is accessible to the workers and visitors at the firms presently occupying the facility

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

5610

YEC Site Inspection   Interview with Charles Andromidas

NYS DEC and NC DOH Files

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

01 State	02 Site Number
	NEW

II. DRINKING WATER SUPPLY

01 Type of Drinking Supply (Check as applicable)

	Surface	Well
Community	A. [ ]	B. [X]
Non-community	D. [ ]	D. [ ]

02 Status

Endangered	Affected	Monitored
A. [ ]	B. [ ]	C. [X]
D. [ ]	E. [ ]	F. [ ]

03 Distance to Site

A 1 (mi)

B ______ (mi)

II. GROUNDWATER

01 Groundwater Use in Vicinity (Check one)

[x] A. Only Source for Drinking

[ ] B. Drinking (Other sources available) Commercial, industrial, irrigation (No other water sources available)

[ ] C. Commercial, industrial, irrigation (Limited other sources available)

[ ] D. Not Used, Unuseable

02 Population Served by Groundwater 120,000

03 Distance to Nearest Drinking Waterwell 1 (mi)

04 Depth to Groundwater	05 Direction of Groundwater Flow	06 Depth to Aquifer of Concern	07 Potential Yield of Aquifer	08 Sole Source Aquifer
approx. 43 (ft)	S-SW	43 (ft)	______ (gpd)	[x] Yes [ ] No

09 Description of Wells (including usage, depth, and location relative to population and buildings)

There are number of wells owned by Hicksville(8), Jericho(7), Levittown(4), Bethpage(1), Bowling Green(1), Westbury(4), Plainview(2) Water Districts and the Village of Old Westbury(1).

10 Recharge Area

[X] Yes
[ ] No

Comments: The area is part of the Magothy recharge zone.

11 Discharge Area

[ ] Yes
[x] No

Comments:

IV. SURFACE WATER

01 Surface Water (Check one)

[ ] A. Reservoir Recreation Drinking Water Source

[ ] B. Irrigation Economically Important Resources

[ ] C. Commercial, Industrial

[x] D. Not Currently Used

02 Affected/Potentially Affected Bodies of Water

Name:	Affected	Distance to Site
N/A	[ ]	______ (mi)
	[ ]	______ (mi)
	[ ]	______ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 Total Population Within

One (1) Mile of Site	Two (2) Miles of Site	Three (3) Miles of Site
A. 16,000 No. of Persons	B. 65,000 No. of Persons	C. 130,000 No. of Persons

02 Distance to Nearest Population

0 (mi)

03 Number of Buildings Within Two (2) Miles of Site

~1,000

04 Distance to Nearest Off-Site Building

0.01 (mi)

05 Population Within Vicinity of Site (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site lies in an industrial area concentrated between West John St. and Long Island Railroad. Residential areas are located along Old Country Road.

56106

PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

VI. ENVIRONMENTAL INFORMATION

Permeability of Unsaturated Zone (Check one)

[ ] A. 10^{-6} - 10^{-8} cm/sec [ ] B. 10^{-4} - 10^{-6} cm/sec [X] C. 10^{-4} - 10^{-3} cm/sec [ ] D. Greater Than 10^{-3} cm/sec

Permeability of Bedrock (Check one)

[X] A. Impermeable (Less than 10^{-6} cm/sec) [ ] B. Relatively Impermeable (10^{-4} - 10^{-6} cm/sec) [ ] C. Relatively Permeable (10^{-2} - 10^{-4} cm/sec) [ ] D. Very Permeable (Greater than 10^{-2} cm/sec)

03 Depth to Bedrock	04 Depth of Contaminated Soil Zone	05 Soil pH
000-1200 (ft)	unknown (ft)	

06 Net Precipitation	07 One Year 24-Hour Rainfall	08 Slope: Site Slope	Direction of Site Slope	Terrain Average Slope
13 (in)	2.7 (in)	0-2 %	S-SW	0-5 %

Flood Potential	10
Site is in ______ Year Floodplain	[ ] Site is on Barrier Island, Coastal High Hazard Area, Riverine Floodway

Distance to Wetlands (5 acre minimum)		12 Distance to Critical Habitat (of endangered species)
ESTUARINE	OTHER	(Not federally endangered) 1.4 (mi)
A. N/A (mi)	B. N/A (mi)	Endangered Species: Ambystma Tigrinum - Tiger Salamander

Land Use in Vicinity

Distance to:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREA; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 0 (mi)	B. 0.25 (mi)	C. N/A (mi)	D. N/A (mi)

Description of Site in Relation to Surrounding Topography

The site lies on the outwash plain located south of the terminal moraine just east of the geographic center of Nassau County. The site elevation is approximately 120 feet above mean sea level (MSL) and slopes gently to the south and southwest with an average slope of 0-2%. Drainage flow is towards the marsh and tidal areas along the southern shore.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

561067

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

II. SAMPLES TAKEN

Sample Type	01 Number of Samples Taken	02 Samples Sent to	03 Estimated Date Results Available
Groundwater			
Surface Water			
Waste			
Air			
Runoff			
Spill			
Soil			
Vegetation			
Other			

III. FIELD MEASUREMENTS TAKEN

01 Type	02 Comments
Air Quality	No readings detected above ambient background with HNu Photoionization detector.

IV. PHOTOGRAPHS AND MAPS

01 Type [x] Ground [ ] Aerial

02 In Custody of YEC, Inc
(Name of organization or individual)

03 Maps
[ ] Yes
[ ] No

04 Location of Maps

V. OTHER FIELD DATA COLLECTED (Provide narrative description of sampling activities)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

YEC, Inc. Site Inspection

5610c

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 7 - OWNER INFORMATION

01 State	02 Site Number
	NEW

II. CURRENT OWNER(S)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code
Frank Lizza Twin County Asphalt Corporation		449 West John Street, P.O. Box 851		Hicksville	NY	11801
Agway, Inc.		499 West John Street		Hicksville	NY	11801
J.D. Tomfor Transportation Co.		445 West John Street		Hicksville	NY	11801
Alpha John Associates Trinon Development Corp.		(Addresses unknown)				

PARENT COMPANY (If applicable)

08 Name	09 D+B Number	10 Street Address (P.O. Box, RFD #, etc.)	11 SIC Code	12 City	13 State	14 Zip Code

III. PREVIOUS OWNER(S) (List most recent first)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code
AGO Associates c/o Green & Green		Box 700		Lindenhurst	NY	11757

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 Name	02 D+B Number	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	05 City	06 State	07 Zip Code

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYS DEC Files

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 State	02 Site Number
	NEW

CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
Name er current owners	02 D+B Number		10 Name	11 D+B Number	
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code		12 Street Address (P.O. Box, RFD #, etc.)	13 SIC Code	
ty	06 State	07 Zip Code	14 City	15 State	16 Zip Code
rs of Operation	09 Name of Owner				

PREVIOUS OPERATOR(s) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
Name liam Portney	02 D+B Number		10 Name	11 D+B Number	
reet Address (P.O. Box, RFD #, etc.) dress unknown)	04 SIC Code		12 Street Address (P.O. Box, RFD #, etc.)	13 SIC Code	
y 963 -1979	06 State	07 Zip Code	14 City	15 State	16 Zip Code
rs of Operation 3-1979	09 Name of Owner During This Period A.G.O. Associates				
Name	02 D+B Number		10 Name	11 D+B Number	
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code		12 Street Address (P.O. Box, RFD #, etc.)	13 SIC Code	
y	06 State	07 Zip Code	14 City	15 State	16 Zip Code
rs of Operation	09 Name of Owner During This Period				
Name	02 D+B Number		10 Name	11 D+B Number	
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code		12 Street Address (P.O. Box, RFD #, etc.)	13 SIC Code	
y	06 State	07 Zip Code	14 City	15 State	16 Zip Code
rs of Operation	09 Name of Owner During This Period				

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYS DEC and NC DOH Files

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 9 - GENERATOR/TRANSPORTER INFORMATION

01 State	02 Site Number
	NEW

ON-SITE GENERATOR

Name	02 D+B Number
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
City	06 State / 07 Zip Code

OFF-SITE GENERATOR(S)

Name	02 D+B Number	01 Name	02 D+B Number
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
City / 06 State	07 Zip Code	05 City / 06 State	07 Zip Code
Name	02 D+B Number	01 Name	02 D+B Number
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
City / 06 State	07 Zip Code	05 City / 06 State	07 Zip Code

TRANSPORTER(S)

Name	02 D+B Number	01 Name	02 D+B Number
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
City / 06 State	07 Zip Code	05 City / 06 State	07 Zip Code
Name	02 D+B Number	01 Name	02 D+B Number
Street Address (P.O. Box, RFD #, etc.)	04 SIC Code	03 Street Address (P.O. Box, RFD #, etc.)	04 SIC Code
City / 06 State	07 Zip Code	05 City / 06 State	07 Zip Code

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

561067

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 10 - PAST RESPONSE ACTIVITIES

01 State	02 Site Number
	NEW

I. PAST RESPONSE ACTIVITIES

[ ] A. Water Supply Closed — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] B. Temporary Water Supply Provided — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] C. Permanent Water Supply Provided — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] D. Spilled Material Removed — 02 Date Jan. 1975 03 Agency Not documented
Description: solvents, industrial lacquers
s removed Jan. 1975 (ref. 8, p. 16)

[ ] E. Contaminated Soil Removed — 02 Date ______ 03 Agency ______
Description:
oval not reported or documented

[ ] F. Waste Repackaged — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] G. Waste Disposed Elsewhere — 02 Date ______ 03 Agency ______
Description:
oval not reported or documented

[ ] H. On Site Burial — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] I. In Situ Chemical Treatment — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] J. In Situ Biological Treatment — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] K. In Situ Physical Treatment — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] L. Encapsulation — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] M. Emergency Waste Treatment — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] N. Cutoff Walls — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] O. Emergency Diking/Surface Water Diversion — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] P. Cutoff Trenches/Sump — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

[ ] Q. Subsurface Cutoff Wall — 02 Date ______ 03 Agency ______
Description:
None reported or noted.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

01 State	02 Site Number
	NEW

PART 10 - PAST RESPONSE ACTIVITIES

II. PAST RESPONSE ACTIVITIES (Cont.)

01 [ ] R. Barrier Walls Constructed 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] S. Capping/Covering 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] T. Bulk Tankage Repaired 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] U. Grout Curtain Constructed 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] V. Bottom Sealed 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] W. Gas Control 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] X. Fire Control 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] Y. Leachate Treatment 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] Z. Area Evacuated 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] 1. Access to Site Restricted 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] 2. Population Relocated 02 Date ______ 03 Agency ______
04 Description:
None reported or noted.

01 [ ] 3. Other Remedial Activities 02 Date ______ 03 Agency ______
04 Description:

None reported or noted.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

561067

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 11 - ENFORCEMENT INFORMATION

01 State	02 Site Number
	NEW

I. ENFORCEMENT INFORMATION

01 Past Regulatory/Enforcement Action [ ] Yes [X] No

02 Description of Federal, State, Local Regulatory/Enforcement Action

II. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

561067

REFERENCE 4

Ref. 4, 1/1

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: A.G.O. Associates Landfill

I.D. NUMBER: 130029

PERSON
CONTACTED: Charles J. Andromidas

DATE: July 27, 1989

PHONE NUMBER: (516) 867-8445

AFFILIATION: Councellor at Law
Partner in the former A.G.O
Associates

CONTACT
PERSON(S): Marie Mc Donnell

ADDRESS: Freeport, New York

742 Lakeside Drive
North Palm Beach
Florida 33408

TYPE OF CONTACT: Telephone

REFERRED BY: New York Telephone Directory.

INTERVIEW SUMMARY

The A.G.O. Associates was a partnership formed by Mr. Andromidas, Morris & Allen ~~Erin~~ Green (Green & Green) and Jimmy O' Connell. Sometime around 1962-1963, A.G.O. Associates purchased approximately 15 acres just south of West John Street in Hicksville, New York. The property was previously used for sand mining operations. The previous owners were unknown. A sand pit occupied approximately 2/3 of the property and had been mined out down to the water table which was thought to be approximately 35-45 feet below grade. The other 1/3 of the property area towards the front, rear and sides was at grade elevation.

A.G.O. Associates landfilled construction and demolition material into the pre-existing sand pit. Mr. Andromidas had no recollection of any drums been found at the facility at any time. The facility was used for landfilling purposes only. There were plans to turn part of the facility into a golf driving range and they had also secured a permit for an oil depot which never materialized.

Mr. Andromidas estimated that approximately 12 years ago, a portion of the property was sold to Agway, Inc.. Approximately 2 years later, the remaining portions of the property were sold to the Lizzas (Twin County Asphalt). Prior to the sale of the property, the facility had already been graded to current elevation.

REFERENCE 5

Charles J. Andromidas
Counsellor at Law
175 Westbury Avenue
Carle Place, New York 11514
(516) 997-4444

February 13, 1979

Nassau County Department of Health
240 Old Country Road
Mineola, New York 11501

Attention: Mr. Frank D. Pedersen, P.E.
Bureau of Land Resources
Management

Re: A.G.O. Associates - property situate at West John Street, Hicksville, N.Y.

Dear Mr. Pedersen:

Please be advised that I have been informed by William Portney that he has discontinued the fill operation at our location and is at present grading the property, since it is filled to the grade agreed upon.

Very truly yours,

Charles J. Andromidas

CHARLES J. ANDROMIDAS

CJA/nm

REFERENCE 6

Ret. 6, 1/27

Question No	Explanation of Yes Answers

June 22, 1973

Re: AGO Landfill, Hicksville

On June 21, 1973, the writer inspected the above subject site. Mr. William Portney, general foreman, was interviewed.

Mr. Portney stated that the company occupying the northwest corner of their property (cesspool casings) will soon be vacating the premises. This will enable him to extract some of the clean fill, thus prolonging the life of the landfill.

Donald Aitken, Jr.

Donald Aitken, Jr.

DA:yk

Refuse Site Sketch	Location Sketch

KCT 4, 2/27

Question No	Explanation of Yes Answers

July 17, 1973

Re: AGO Landfill, Hicksville

On Friday, July 13, 1973, the writer inspected the above mentioned facility.

No violations were observed; operations appeared to be satisfactory.

SDS

Steven D. Silvers

SDS:yk

Refuse Site Sketch	Location Sketch

Ref 6, 3127

estion No	Explanation of Yes Answers

August 10, 1973

Re: AGO Landfill, Hicksville

On August 7, 1973, the writer inspected the above subject site. Mr. William Portney was interviewed.

The sesspool-casting contractor has moved out allowing for additional room in which to keep the equipment.

Although the working area is well contained, compacted and covered, an excess of salvaged items has been building up. Mr. Portney promised to transfer the material to a salvager in the Bronx within the next two weeks.

Donald Aitken, Jr.

Donald Aitken, Jr.

DA:yk

Refuse Site Sketch	Location Sketch

Ref. 6, 4127

Question No	Explanation of Yes Answers 8-24-73
	No Violations Found (SOS)

Refuse Site Sketch	Location Sketch

Ref. 6, 5/27

:estion No	Explanation of Yes Answers

September 25, 1973

Re: AGO Landfill

On September 21, 1973, the writer visited the above-mentioned premises. No violations were noted. The site was in good repair.

SDS

Steven D. Silvers

SDS:yk

Refuse Site Sketch	Location Sketch

Ret.6, 6/27

Question No	Explanation of Yes Answers
	October 19, 1973
	Re: AGO Landfill
	On October 17, 1973, the writer inspected the above referenced facility. No violations were observed at this time and operation was satisfactory.
	SDS
	Steven D. Silvers
	SDS:yk

Refuse Site Sketch	Location Sketch

Ref. 6, 7127

Question No	Explanation of Yes Answers

November 1, 1973

Re: AGO Landfill

On October 30, 1973, the writer inspected the above mentioned facility. No violations were noted at this time.

SDS

Steven D. Silvers

SDS:yk

Refuse Site Sketch	Location Sketch

Ket.6, 8124

Question No	Explanation of Yes Answers

November 14, 1973

Re: AGO Landfill

On November 9, 1973, the writer inspected the above mentioned facility. No violations were noted at this time.

SDS

~~Steven D. Silvers~~

SDS:yk

Refuse Site Sketch	Location Sketch

Fct 6, 9127

Question No	Explanation of Yes Answers
	November 30, 1973
	Re: AGO Landfill
	On November 27, 1973, the writer inspected the above mentioned facility. No violations were observed at this time.
	SDS Steven D. Silvers
	SDS:yk

Refuse Site Sketch	Location Sketch

Ket. 6, 10|27

stion No	planation of Yes Answers

December 7, 1973

Re: AGO Landfill

On December 4, 1973, the writer inspected the above mentioned facility. No violations were noted at the time of inspection.

SDS

Steven D. Silvers

SDS:yk

Refuse Site Sketch	Location Sketch

Ket 6, 11127

Question No	Explanation of Yes Answers
	~~January 17~~ 1974
	Re: AGO Landfill
	On January 15, 1974, the writer inspected the above mentioned facility. No violations were noted at this time; operation was satisfactory.
	Steven D. Silvers
	SDS:yk

Refuse Site Sketch	Location Sketch

Ket. 6, 12127

tion No	Explanation of Yes Answers

February 4, 1974

Re: AGO Landfill

On January 27, 1974, the writer inspected the above mentioned facility. No violations were noted at this time.

SDS

Steven D. Silvers

SDS:yk

Refuse Site Sketch	Location Sketch

Ket.-6, 15127, page 2

stion No | Explanation of Yes Answers

A.G.O. Landfill, Hicksville May 24, 1974

On May 23, 1974, the writer inspected the above site. Mr. Portney was interviewed.

A noticeable improvement was observed in that many of the smallor dumping sites (wood debris is seperate from demolition) have been covered over with fill and leveled..

Although a considerable amount of salvaged metals remain at the site, Mr. Portney maintains that he sends out several truckloads of ferrous metals at least twice a week.

Donald Aitken, Jr.

Donald Aitken, Jr.

DA:tp

Refuse Site Sketch	Location Sketch

Ket. 6, 14127 page 4

tion No	E(.anation of Yes Answers

A.G.O. Landfill, Hicksville, N.Y. October 15, 1974

On October 2, 1974, Mr. Juczac, accompanied by writer, inspected the above site. The Foreman, Mr. Bill Portney, was interviewed. He reported that he has salvage rights for the old cement plant structure due east of his property and will begin working on it as soon as operations cease.

Writer accompanied Mr. Juczak on a tour of the site. Aside from finding too many "working areas" we found several dozen, or more, 55-gallon drums of industrial solvents, laquers and paint. Mr. Portney was told to rid the area of these hazards to ground water as soon as possible. A re-inspection to assure compliance was scheduled for early the following week.

Donald Aitken, Jr.

DA:

Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

...tion

E.planation of Yes Answers

A.G.O. Landfill, Hicksville, N.Y. October 15, 1974

On October 7, 1974, a reinspection of the above premises was made following the discovery, on October 2nd., of numerous 55-gallon drums of industrial solvents. Mr. Portney reported a count of 33 drums in all of which he had disposed of 18. A follow-up inspection the week of October 15th. will be made to see that all drums are disposed of.

Donald Aitken, Jr.

DA: Donald Aitken, Jr.

Refuse Site Sketch

Location Sketch

Ke-6, 16127

(lanation of Yes Answers (

A30 Landfill, Hicksville, NY October 30, 1974

On October 28, 1974, writer reinspected the above site and interviewed Mr. Portney. Earlier inspections revealed numerous 55-gallon containers filled with industrial solvents and thinners, etc. They were earlier ordered emptied and/or disposed of in a proper fashion.

A total count of the barrels, as of 10/23/74, indicated there are between 60-75 of them with only 13 emptied and stacked near Mr. Portney's office. He was told that the entire lot must be disposed of within two weeks (no later than 11/11/74) along with written documentation that the contents were acceptably disposed of via commercial chemical salvage. Mr. Juczak also suggested a chemical sampling of various of the drums prior to disposal.

Donald Aitken, Jr.

DA: Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

stion No	Ex..anation of Yes Answers

Re: AGO Landfill, Hicksville, NY. November 12,1974

On November 8, 1974, writer inspected the subject site; Mr. Portney was interviewed. He reported that, to date, he has removed more than eighty 55-gallon drums. An inspection of the site revealed that some twenty to thirty barrels remain. Mr. Portney is well aware that he is subject to violation if all barrels are not removed. Due to the attention he is giving the problem, he has asked for one more week to rid the site; cut-off date now extended to Friday, November 15, 1974. Mr. Portney was advised that any spillage was to be mixed with sand or other suitable wet chemical absorbant and this, too, removed from the landfill.

Donald Aitken, Jr.

DA: Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

Question No	Explanation of Yes Answers

Re: A30 Landfill, Hicksville, NY

November 20, 1974

On November 13, 1974, writer inspected above site and interviewed Mr. Portney. The site is currently under bi-weekly inspection basis due to finding more than one hundred 55-gallon industrial drums filled with assorted fluids, some extremely toxic. Last inspection revealed most had been got rid of. This date, Mr. Portney reported that, due to illness in the family, he had closed the site and had not sent out any of the remaining barrels. Due to his cooperation in the past, the deadline for ridding the premises of this potential violation will be extended one week.

Donald Aitken, Jr.

DA:

Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

Ref. 6, 19127

...tion No	...planation of Yes Answers	Page 14

Re: AGO Landfill, W. John St., Hicksville. December 4, 1974

On November 27, 1974, writer inspected above site and spoke to Mr. Portney. Site is still under summary surveillance due to numerous 55-gallon drums still on the premises. Mr. Portney was informed that since the site will be inspected before 12/16/74, all barrels will have to be removed by that time or a violation notice will be served. He stated that he should be able to comply by that date.

Donald Aitken, Jr.

DA: Donald Aitken, Jr.

Refuse Site Sketch

Location Sketch

Re: AGO Landfill, Hicksville, N.Y. January 13, 1975

On January 7, 1975, writer inspected the above site and interviewed Mr. Portney. He reported that although all barrels have been disposed of, a fine slick of what was described as newspaper ink remains in the area where the drums were stored. Due to inclement weather the past few weeks, i.e., heavy rain, he has not had a chance to cover the "slick" with a layer of sand.

Donald Aitken, Jr.

DA: Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

Ket 6, 21/27 Page 18

tion
o

E anation of Yes Answers

Re: A.G.O. Landfill, Hicksville, NY February 28, 1975

On February 25, 1975, writer inspected above site. Mr. Portney was intervi by telephone on 2/27/75. The problem with the previously sighted 55-gallon drums has been eliminated. However, Mr. Portney stated that a good deal of sand which had been mixed with spillings from the 100 or more containers will have to be removed.

Mr. Portney's site was found to have an oversupply of salvage (i.e., iron reinforcing screen, aluminum, etc.). He stated that he is going to try to wait until prices for this material goes back up to acceptable levels. Consolidation, here, as in other operations, would not make the site so cluttered looking.

Donald Aitken, Jr.

DA:

Donald Aitken, Jr.

Refuse Site Sketch	Location Sketch

KCT. 6, 20127

Page. 19 File

N^FILL INSPECTION REPORT n ~~Resources Management~~ ssau County rtment of Health		Facility A. G.O Landfill	
		Location West John St. Hicksville	
		Site No. 222	
erson rviewed	Bill Portney	Overall Rating	☑ Satisfactory ☐ Marginal ☐ Unsatisfactory
of nspector	Steven D. Silvers	Inspection Time 45 minutes	Date Inspected 10/6/75

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S	M
1. Spreading and Compaction	✓			14. Blowing Litter Control	✓	
Daily and Intermediate Cover	✓			15. Odor Control	✓	
3. Final Cover	✓			16. Dust Control	✓	
Depth of Cells	✓			17. Vector Control	✓	
5. Size of Working Face	✓			18. Control of Open Burning	✓	
Side Slopes	✓			19. Fire Protection	✓	
7. Dumping into Water Controlled	✓			20. Control of Salvaging	✓	
Sufficient Equipment, Good Repair	✓			21. Bulky Waste Handling	✓	
9. Access Road Maintenance	✓			22. Supervision of Unloading	✓	
Surface Drainage	✓			23. Maintenance, Homeowner Area N/A		
Maintenance of Completed Areas	✓			24. Access Limited	✓	
Leachate Control N/A				25. Other		
Monitoring Wells N/A						

INSPECTION REPORT

Area inspected and found to be clean and well maintained. Mr. Portney stated that a one-acre portion of the site had been sold to an adjoining beer distributor for the purpose of expanding his parking space. At the time of inspection, a Dozer was in the process of bringing this area to the existing grade of the parking lot by using fill material on the adjacent site area. The trench being excavated by this process will be filled with the new material that comes in. Some material, mostly construction debris with some rubbish mixed in, was unloaded adjacent to this trench and will be used to fill in this trench. Mr. Portney also stated that the site should be completed by the spring of 1976 at the outside at which time operation will cease. It should also be noted that the landfill is not open for business on mondays starting this week but will be open tuesday to saturday. No loads will be taken for disposal on mondays from now on.

SDS

Oct. 4, 20127

LANDFILL INSPECTION REPORT
...d Resources Management

Nassau County
...partment of Health

Facility	A.G.O.
Location	W. John St, Hicksvi
Site No.	227
Overall Rating	☐ Satisfactory ☒ Marginal ☐ Unsatisfactory
Inspection Time	37 min
Date Inspected	11

Person Interviewed: Bill Fortney

...e of ...spector: Donald Wilkins, Jr

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S
1. Spreading and Compaction		✓		14. Blowing Litter Control	✓
2. Daily and Intermediate Cover	✓			15. Odor Control	✓
3. Final Cover	✓			16. Dust Control	✓
4. Depth of Cells	✓			17. Vector Control	✓
5. Size of Working Face	✓			18. Control of Open Burning NA	
6. Side Slopes	✓			19. Fire Protection	✓
7. Dumping into Water Controlled NA				20. Control of Salvaging	✓
8. Sufficient Equipment, Good Repair		✓		21. Bulky Waste Handling	✓
9. Access Road Maintenance	✓			22. Supervision of Unloading	✓
10. Surface Drainage	✓			23. Maintenance, Homeowner Area NA	
11. Maintenance of Completed Areas	✓			24. Access Limited	✓
12. Leachate Control N/O				25. Other	
13. Monitoring Wells NA					

INSPECTION REPORT

#s 1 & 8 - Mr Fortney stated ~~that~~ his bulldozer has been "down" for 2 weeks. Last inspection (10/28/7...) revealed marginal compaction and cover for the above reason. Cover material satisfactory as he has trucks carrying clean fill dump on top of exposed areas.

— He stated he has been visited by a Mr. Alex Lasko?? of TOB Building ~~Sanitation~~ Dept Division of dumping...

Ref. 6, 24/27 T11 Pag

LANDFILL INSPECTION REPORT
L nd Resources Management
Nassau County
Department of Health

Facility	A.G.O.
Location	W. John St., Hick.
Site No.	222
rson Interviewed	Bill Poptany
Overall Rating	☐ Satisfactory ☐ Marginal ☐ Unsatisfactory
me of spector	Donald Airlin Jr.
Inspection Time	30 min
Date Inspected	5

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S
. Spreading and Compaction	\			14. Blowing Litter Control	\
2. Daily and Intermediate Cover		\		15. Odor Control	\
. Final Cover	\			16. Dust Control	\
4. Depth of Cells	\			17. Vector Control	\
. Size of Working Face	\			18. Control of Open Burning NA	
6. Side Slopes	\			19. Fire Protection	\
. Dumping into Water Controlled	\			20. Control of Salvaging	\
8. Sufficient Equipment, Good Repair	\			21. Bulky Waste Handling	\
. Access Road Maintenance	\			22. Supervision of Unloading	\
. Surface Drainage	\			23. Maintenance, Homeowner Area NA	
. Maintenance of Completed Areas	\			24. Access Limited	\
. Leachate Control NO				25. Other	
. Monitoring Wells NA					

INSPECTION REPORT

2 - SW corner being covered and the Opening NW corner near area where salvage (almost all Removed) used to be.

DA 5/11

Kct. 6, 20127

FDV

Page 2

ANDFILL INSPECTION REPORT ar. Resources Management assau County Department of Health	Facility A. J. D. Location W. John St., Hicksv Site No. 22
Person Interviewed Mr. Portuny	Overall Rating ☐ Satisfactory ☒ Marginal ☐ Unsatisfactory
Name of Inspector Jonas Aitken, Jr.	Inspection Time 30 min · Date Inspected 6/3

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S	M
1. Spreading and Compaction		✓		14. Blowing Litter Control	✓	
2. Daily and Intermediate Cover		✓		15. Odor Control	✓	
3. Final Cover	✓			16. Dust Control	✓	
4. Depth of Cells	✓			17. Vector Control	✓	
5. Size of Working Face	✓			18. Control of Open Burning NA		
6. Side Slopes	✓			19. Fire Protection	✓	
7. Dumping into Water Controlled	✓			20. Control of Salvaging *	✓	
8. Sufficient Equipment, Good Repair	✓			21. Bulky Waste Handling	✓	
9. Access Road Maintenance	✓			22. Supervision of Unloading	✓	
10. Surface Drainage	✓			23. Maintenance, Homeowner Area NA		
11. Maintenance of Completed Areas	✓			24. Access Limited	✓	
12. Leachate Control N/O				25. Other		
13. Monitoring Wells NA						

INSPECTION REPORT

* #20 - All salvage gone.

#1 & 2 - Former salvage area now being used for landfill. When Mr. Portuny attention was directed to lack of compaction and cover, he stated that he has directed all wee[illegible] to mandatory removal (TOB VN) of salvage. JA 6/6

Ket. le, 2/2/7 ... Page 2

DFILL INSPECTION REPORT . Resources Management ...au County ...artment of Health	Facility: A.G.D.
	Location: W. John St. Hicksville
	Site No. 2221
...n ...erviewed: Mr. Portney	Overall Rating: ☒ Satisfactory ☐ Marginal ☐ Unsatisfactory
...of ...ctor: Donald Aitken, Jr.	Inspection Time: 30 min. — Date Inspected: 2/2

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S	M	U
...preading and Compaction		✓		14. Blowing Litter Control	✓		
Daily and Intermediate Cover		✓		15. Odor Control	✓		
...inal Cover	✓			16. Dust Control	✓		
Depth of Cells	✓			17. Vector Control	✓		
...ize of Working Face	✓			18. Control of Open Burning NA			
Side Slopes	✓			19. Fire Protection	✓		
...mping into Water Controlled	✓			20. Control of Salvaging	✓		
Sufficient Equipment, Good Repair		✓		21. Bulky Waste Handling	✓		
...ccess Road Maintenance	✓			22. Supervision of Unloading	✓		
Surface Drainage	✓			23. Maintenance, Homeowner Area NA			
...aintenance of Completed Areas	✓			24. Access Limited	✓		
...eachate Control N/A				25. Other			
...onitoring Wells NA							

INSPECTION REPORT

1, 2 & 8 – Mr Portney is working on his non working bulldozer with the result that a small pile of agricultural debris and concrete has not been landfilled. Reinspection scheduled for wk of 2/13/78.

DA 2/3

...2 6/75 See Reverse Side for Sketch

ANDFILL INSPECTION REPORT and Resources Management	Facility A.G.O.
	Location W [illegible] St., Hicksvil
assau County epartment of Health	Site No. 22 b
rson nterviewed Bill Portnoy	Overall Rating ☐ Satisfactory ☒ Marginal ☐ Unsatisfactory
me of spector Donald Retzlan, Jr.	Inspection Time 30 min — Date Inspected 3/

S-Satisfactory M-Marginal U-Unsatisfactory

Item	S	M	U	Item	S
Spreading and Compaction	✓			14. Blowing Litter Control	✓
Daily and Intermediate Cover		X		15. Odor Control	✓
Final Cover	✓			16. Dust Control	✓
Depth of Cells	✓			17. Vector Control	✓
Size of Working Face	✓			18. Control of Open Burning NA	
Side Slopes	✓			19. Fire Protection	✓
Dumping into Water Controlled	✓			20. Control of Salvaging	✓
Sufficient Equipment, Good Repair	✓			21. Bulky Waste Handling	✓
Access Road Maintenance	✓			22. Supervision of Unloading	✓
Surface Drainage	✓			23. Maintenance, Homeowner Area NA	
Maintenance of Completed Areas	✓			24. Access Limited	✓
Leachate Control N/a				25. Other	
Monitoring Wells NA					

INSPECTION REPORT

2. Much improved over last visit (3/20) Some debris (SE corner) uncovered. Increased volume of material enter premises. Mr Portnoy was advised ~~th~~, due to poor operations during March, 1978, increased surveillance would be made. — Should conditions worsen, D.E.C. would have to be notified.

DA 3/24/

REFERENCE 7

Rea 7, 1/1

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: A.G.O. Associates Landfill

PERSON CONTACTED: Mr. Swedalla

AFFILIATION: Northwest Civic Association

ADDRESS: 333 West John Street
Hicksville
New York 11801

TYPE OF CONTACT: Telephone

I.D. NUMBER: 130029

DATE: August 2, 1989

PHONE NUMBER: (516) 931-7244

CONTACT PERSON(S): Marie Mc Donnell

REFERRED BY: Mary Ann Ferrado
Northwest Civic
Association

INTERVIEW SUMMARY

Mr. Swedalla remembers the A.G.O. "dump" as being approximately where Twin County Asphalt Recycling Corporation (the Lizzas), Agway and a portion of the bus company are today. He remembers walking thru the area on a number of occasions when landfilling occurred there. They advertised for clean fill but for $5.00 or $10.00 a load, they landfilled "everything" including 55 gallon drums, although he had no knowledge of any contents in these drums.

He also remembers there being a pipe factory (Athlantic) on the property and thought that the water used to wash out the pipes washed washed into the hole. The hole was in the area presently occupied by Twin County Asphalt buildings. He estimated this to be around the 1940's.

Across the railroad tracks behind the A.G.O. site there used to be another open refuse dump in the late 1930's.

ACKNOWLEDGEMENT

I have read the above transcript and I agree it is an accurate summary of the information verbally conveyed to the YEC, Inc. interviewer (as revised below, if necessary).

Revisions (please write in any corrections needed to the above transcript)

(added info:) They also had fires in the dumping area, when they had to call the Hicksville Fire dept. to put the fire out, which smoldered for a couple of days.
The above information I have given you in our phone conversation is to the best of my knowledge.

Signature: Theodore S[illegible] Date: 8/10/89

REFERENCE 8

Ke. 6, 1|1

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: A.G.O. Associates Landfill

I.D. NUMBER: 130029

PERSON CONTACTED: Katherine Del Rosso

DATE: July 28, 1989

AFFILIATION: Duffy Park Civic Association

PHONE NUMBER: (516) 938-6201

ADDRESS: P.O. Box 8120
Hicksville
New York 11801

CONTACT PERSON(S): Marie Mc Donnell

TYPE OF CONTACT: Telephone

REFERRED BY: Mary Ann Ferrado
Northwest Civic
Association

INTERVIEW SUMMARY

Ms. Del Rosso became interested in the A.G.O. landfill site when investigating a plume of "asphalt dust/smog" from the Twin County Asphalt Recycling operation. The plume hangs low over the local residences and makes outdoor activities uncomfortable.

Upon researching the property limits and ownership with the local tax assessment maps, she came to know of the A.G.O. landfill which was known to area residents during its years of operation as the "A.G.O. dump". Some of the "oldtimers" in the area say that everything was dumped there including barrels.

Approximately a year and a half ago, on a site visit, Ms. Del Rosso noted numerous barrels on the east side of the former A.G.O. property (exact location on current properties unknown). The tops of some of these barrels were leaking black sludge.

Ms. Del Rosso expressed her concern that the site lies across the street from a water recharge basin, its proximity to local residential areas and drinking water supplies.

ACKNOWLEDGEMENT

I have read the above transcript and I agree it is an accurate summary of the information verbally conveyed to the YEC, Inc. interviewer (as revised below, if necessary).

REFERENCE 9

Ref. 4, 41

Page 1

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: A.G.O. Associates Landfill

I.D. NUMBER: 130029

PERSON CONTACTED: Stanley Juczak, P.E., M.C.E.

DATE: August 15, 1989

PHONE NUMBER: (516) 535-3314

AFFILIATION: Director
Center for Environmental Protection

ADDRESS: Nassau County Department of Health
240 Old Country Road
Mineola
New York 11501

TYPE OF CONTACT: Telephone

CONTACT PERSON(S): Marie Mc Donnell

INTERVIEW SUMMARY

Mr. Juczak visited the A.G.O. Associates site on one occasion (October 2) in 1974 while supervising the inspection, as per other sites being inspected at the time in Nassau County.

During the visit, 55 gallon drums were discovered at the facility. They were ordered to be removed from the site. Mr. Juczak does not remember any chemicals or odors from the drums ~~and appeared at the time to be just a one-time occurrance incidental to construction and demolition debris. Therefore~~, No analytical sampling was done on the contents before disposal. The drums were found at several locations on the facility at grade level.

SJ

ACKNOWLEDGEMENT

I have read the above transcript and I agree it is an accurate summary of the information verbally conveyed to the YEC, Inc. interviewer (as revised below, if necessary).

Revisions (please write in any corrections needed to the above transcript)

Noted above

Signature:

Date: 8/16/89

REFERENCE 10

KCT-10, 1/1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a REGION: 1 SITE CODE: 130029
EPA ID:

NAME OF SITE : AGO Associates
STREET ADDRESS: South of West John Street
TOWN/CITY: COUNTY: ZIP:
Hicksville Nassau 11753

SITE TYPE: Open Dump- Structure- Lagoon- Landfill- X Treatment Pond-
ESTIMATED SIZE: 14.4 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: ** Multi - Owner Site **
CURRENT OWNER ADDRESS.: * * * * *
OWNER(S) DURING USE...: AGO Associates
OPERATOR DURING USE...: AGO Associates
OPERATOR ADDRESS......: Box 700, Lindenhurst, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To

SITE DESCRIPTION:
In 1963, AGO Associates, a partnership formed by Charles Andromidas, Morris and Aaron Green, and James O'Connell, purchased this property, which was then a 35 to 45 foot deep sand pit covering about 10 acres. Between 1963 and January, 1979 the pit was filled with construction and demolition material. In 1974, the Nassau County Health Dept. discovered several drums containing industrial solvents, lacquers, and thinners. The drums, and any spillage were removed in January, 1975. Local residents recall that although a sign at the facility entrance advertised for "clean fill", all kinds of truckloads of waste were disposed there. NYSDEC sampled surficical soil at the site in September of 1987. A Phase I report was completed in September, 1989.

This report has been included as part of the phase II investigation report.

HAZARDOUS WASTE DISPOSED: Confirmed- TYPE	Suspected-X QUANTITY (units)
Unknown	Unknown

REFERENCE 11

1-- 11, 1150

ENGINEERING INVESTIGATION OF INACTIVE HAZARDOUS WASTE SITES

- PHASE II INVESTIGATIONS -

AGO Associates Site
Site No: 130029
Town of Oyster Bay, Nassau County
Final - June 1992

2ccP
6/19/92

NYD 986888899

ST
Reviewed: 6/23/92
Recommend: L
by G. Ferreira

DEPARTMENT OF ENVIRONMENTAL CONSERVATION · NEW YORK STATE ·

Prepared for:
New York State
Department of
Environmental Conservation

50 Wolf Road, Albany, New York 12233-7010
Thomas C. Jorling, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole Jr., P.E., Director

Prepared by:

ROUX ASSOCIATES, INC.
775 Park Avenue
Huntington, New York 11743

Subcontractor to:
Gibbs & Hill, Inc.
New York, New York

ROUX

GH07710Y.1.14 cov

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C. Geologic Logs and Monitoring Well Construction Logs
D. Chain of Custody Documentation
E. Aquifer Testing Data
F. Federal and State Water Standards and Goals
G. Names and Addresses of Subcontractors
H. Surveyor's Sketch and Elevation Data
I. NYSDEC Division of Hazardous Waste Remediation Inactive Hazardous Waste Disposal Report
J. EPA Potential Hazardous Waste Site, Site Inspection Report Form 2070-13.

Ref. 11, 4/50

1.0 EXECUTIVE SUMMARY

Roux Associates, Inc. (Roux Associates) was subcontracted by Gibbs & Hill, Inc. to conduct a Phase II investigation at the former AGO Associates landfill site (Site) (ID No. 130029) for the New York State Department of Environmental Conservation (NYSDEC). A Phase II Work Plan Update prepared by Roux Associates was submitted to the NYSDEC in September of 1990, and approved. This report presents the results of the Phase II investigation.

The Site is located in the Town of Oyster Bay, Nassau County, New York (Figure 1) and originally consists of a 14.4 acre plot which was permitted to be filled with construction and demolition debris. After closure of the landfill, the Site was sold to, and is currently occupied by, five new property owners (Agway, Inc., Alpha John Associates, Trinon Development Corporation, J.D. Tomfor Transportation Company, and Twin County Asphalt Corporation) for commercial and industrial purposes.

As a result of monthly inspections by the Nassau County Department of Health (NCDOH) several violations were noted at the Site. Most notable of these violations was the storage of over 100 55-gallon drums containing industrial solvents, lacquers, and thinners. The NCDOH ordered AGO Associates to remove and properly dispose of these drums in 1975. AGO Associates complied.

The landfill was closed in January of 1979 following the final cover and grading of the landfill.

A Phase I study of the Site was conducted by YEC, Inc. in 1989 and was unable to make any final conclusions on possible Site contamination.

A Phase II investigation of the Site was performed by Roux Associates to calculate the final Hazard Ranking System (HRS) scores so the Site can be classified for possible further action by the NYSDEC. Field investigations included:

- a site reconnaissance;
- an air monitoring survey;
- a limited geophysical survey;

- installation of six monitoring wells;
- collection of soil samples for physical analysis; and
- the collection of nine ground-water samples.

Ground water was analyzed to determine the occurrence and investigate the extent of potential contamination at the Site.

Several volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals were detected in the ground water sampled at the Site. However, these concentrations were low to moderate, and were not significantly higher in the downgradient wells than in the upgradient wells. Therefore, no significant release of hazardous substances is believed to be presently occurring at the Site.

The final HRS scores for the Site based on the Phase II investigation have been calculated as follows (see Section 5):

Sm = No Score

Sgw = No Score

Ssw = 0

Sa = 0

Sfe = Not Scored

Sdc = 0

Professional engineering review of this report has been furnished by Remedial Engineering, P.C., Huntington, New York.

2.0 PURPOSE

The objective of a New York State Superfund Phase II investigation of an inactive hazardous waste site is to determine if contaminants are present or leaving the Site with a resulting impact on human population and/or the environment.

At the AGO Associates site, the objective of the investigation was to collect the information required to develop final HRS scores and to classify the Site for further action. This included collecting the field data necessary to identify the occurrence and characteristics of contamination and determine if a release of contaminants from the Site has occurred. These data were used to determine if any imminent and/or significant environmental or health hazard exists. These objectives were accomplished through the installation of ground-water monitoring wells and the sampling and analysis of ground water and soil.

3.0 SCOPE OF WORK

A Phase II investigation was performed at the Site by Roux Associates in order to characterize the subsurface conditions at the Site (i.e. soil, stratigraphy, ground-water flow, and ground-water quality) and to identify the nature and extent of possible soil and ground-water contamination. A Work Plan update was submitted by Roux Associates in September, 1990, to define the scope of drilling and sampling at the Site and was approved by the NYSDEC. The Phase II investigation also included an in-depth search and review of relevant literature and historical data, which are provided in Appendix A.

3.1 Introduction

The field investigation was conducted by Roux Associates between August 1990 and April 1991, and included a site reconnaissance, air survey, a limited geophysical survey, the installation of six monitoring wells, and soil and ground-water sampling and analysis.

3.2 Air Survey

An air monitoring survey was conducted at the Site on August 7, 1990 to determine the quality of air in and around the perimeter of the Site and to delineate the source of any airborne contaminants.

Four instruments were utilized in this survey. These included the Model OVA128 Century Organic Vapor Analyzer (OVA), the 580A portable Organic Vapor Meter (OVM), the RM-750 Micro-Roentgen Radiation Monitor (Radiometer), and the Gastech Model 6X-82 Personal Three-Way Gas Alarm (Tri-Gas Meter).

In accordance with the Site Health and Safety Plan contained in the Roux Associates' Phase II Work Plan Update, all four of the above-mentioned instruments were used to monitor the air in the working zone during site activities.

3.3 Geophysical Survey

A limited geophysical survey was conducted at the Site on August 7, 1990 at the proposed well locations, using a Schonstedt Model 64A-52 Flux gate Magnetometer to detect buried ferromagnetic objects which might be encountered during drilling activities. There were no major magnetometer responses at any of the well locations proposed by NYSDEC, however some locations contained small discrete areas of response probably due to small near-surface ferromagnetic objects. Field procedures and results of the survey were submitted as part of the Phase II Work Plan Update.

3.4 Soil Sampling

Soil sampling at the Site included the collection of split-spoon samples for geologic logging, field screening for potential contamination, and grain size analysis.

Split-spoon samples were collected every five feet from the land surface to the bottom of the borings drilled for monitoring wells as described in Appendix B. Each sample was field screened with the OVM for the presence of organic vapors, immediately upon its removal from the split spoon. All OVM readings were zero. Geologic logs are presented in Appendix C.

Six soil samples were collected between February 20 and March 6, 1991 from the screened zone of each of the monitoring wells, and chain of custody documentation was maintained for each sample (Appendix D). Grain size analyses were performed on these samples to confirm the pre-selected screen slot size (.010 slot is primarily used since the soils on Long Island are primarily sand and gravel) and to characterize the aquifer materials at the water table. These analyses are included in Appendix E. The purpose of properly sizing the screen slot is to minimize suspended solids in the ground-water sample.

3.5 Monitoring Well Installation

Six monitoring wells were installed between February 20 and March 6, 1991 at the locations shown in Figure 2 by Marine Pollution Control, Calverton, New York under the supervision of a hydrogeologist from Roux Associates. Monitoring well installation procedures are described in Appendix B. Monitoring well construction details are presented in Table 1, and well construction diagrams and geologic logs are given in Appendix C.

3.6 Ground-Water Sampling and Analysis

Nine ground-water samples, including one duplicate, as well as a Matrix Spike/Matrix Spike Duplicate (MS/MSD), were collected on March 26 and 27, 1991 following the Procedures outlined in Appendix B. Two of the wells sampled (MW-7 and MW-8) were preexisting and are located on the Magnusonics property (Figure 2).

The samples were analyzed for Target Compound List (TCL) metals, volatiles, semi-volatiles and pesticides/PCBs. H2M Laboratories, Melville, New York, performed the analyses in accordance with the January 1990 NYSDEC Contract Laboratory Protocols (CLP). The analytical results are discussed in Section 4.5 and are included in Appendix E.

3.7 Aquifer Testing

The hydraulic characteristics of the aquifer were determined through the performance of slug tests. Water levels in the ground-water monitoring wells were measured to determine the direction of flow of ground water at the Site. Rising head slug tests were conducted on monitoring wells MW-1 through MW-6 to determine the hydraulic characteristics of the shallow materials surrounding the screens. The results are discussed in detail in Section 4.4.

Water-level measurements collected on March 11 and April 18, 1991 are presented in Table 2 and are discussed in detail in Section 4.4. Water level contours are presented in Figure 3.

4.0 SITE ASSESSMENT

4.1 Site History

The Site, located on West John Street in Hicksville, New York, is the former AGO Landfill and consists of a 14.4 acre plot which was permitted to be filled with construction and demolition debris (Figure 1). The plot is currently occupied by five new property owners (Figure 2). Three of the property owners, Agway Inc., Alpha John Associates, and Trinon Development Corporation, purchased their parcels during the 1970's prior to closure of the landfill. The other two plots were purchased by J.D. Tomfor Transportation Company and Twin County Asphalt Corporation in 1981 (Reference 2, Section 5).

The facility was previously a sand mining operation until it was purchased in 1963 by Charles Andromidas, Morris and Aaron Green, and Jimmy O'Connell, forming the partnership known as AGO Associates. The pre-existing sand pit was used for the landfilling of construction and demolition debris from 1963 until January of 1979 (Reference 2, Section 5).

The Nassau County Department of Health (NCDOH) began inspecting the facility on a monthly basis in 1973. During the inspections it was discovered that industrial, commercial, and agricultural wastes were landfilled at the Site. Local residents have reported that they have witnessed materials other than construction and demolition debris (drums, etc.) being deposited at the Site (References 1,2,3,4). No information could be obtained to determine if the Site was under permit by the NYSDEC at any time.

During the inspections conducted by the NCDOH, a number of violations were observed at the Site. These included the improper spreading and compaction of refuse, over accumulation of salvage materials, outbreaks of smoldering fires, and rodent infestation. Several dozen 55 gallon drums of industrial solvents, lacquers, and thinners were discovered at the Site on October 2, 1974. The Site was then inspected biweekly and on subsequent inspections more than 100 55-gallon drums were discovered at a number of locations across the Site. NCDOH officials ordered the drums to be removed via commercial chemical salvage and any spillage to be mixed with absorbent and removed from the landfill. By January 13, 1975 all of the drums had been removed and disposed (Reference 4).

Ref. 11, 11/50

Alex Pank of the Town of Oyster Bay Zoning Department served a summons to AGO Associates on December 7, 1976 charging them with illegal salvage operations and heavy equipment storage at the Site. AGO Associates complied with the summons and removed the salvage and heavy equipment from the site (Reference 3, Section 5).

The New York State Department of Environmental Conservation (NYSDEC) frequently inspected the Site from October of 1978 to December of 1979. During this time the final cover was being applied to the landfill and the Site was dormant. The Site generally received favorable reports with only minor incidents reported. In January of 1979 the landfill was completely covered and graded signalling the close of the landfill (Reference 5).

The NYSDEC conducted a sampling program during which a total of 14 soil samples were taken from the surficial soils and materials on the Site. The results of the analysis of these samples indicated low levels of pesticides and volatile organic compounds (Reference 6). However the exact location of the sampling points were not found in the NYSDEC records reviewed. Also many of the detections were of estimated values and found in the field blank as well. Due to the limits of this information conclusions resulting from this data could not be drawn.

4.2 Topography

The Site is located to the east of the geographical center of Nassau County, Long Island. The Site was previously a landfill for construction and demolition debris but has since been divided up into five separate commercial properties (Reference 2, Section 5). The entire area of the Site covers approximately 14.4 acres and was graded to an elevation of 120 feet above mean sea level (MSL) with a slope of 0 to 2 percent to the south. There are no designated wetlands within one mile of the Site (Reference 10, Section 5 and Reference 11, Section 5).

The Site is located within a heavily commercial area with the north and south boundaries bordered by West John Street and the Long Island Railroad, respectively. The nearest residential areas are approximately 0.25 mile to the south of the Site (Reference 10, Section 5).

4.3 Air Survey

An air monitoring survey was conducted on August 7, 1990 to determine the quality of air in and around the perimeter of the Site, and to delineate the source of any airborne contaminants.

A perimeter survey was conducted utilizing an OVA, OVM, Tri-Gas Meter and a Radiometer. The readings on all four instruments, and wind direction, were recorded as they occurred. Throughout the entire survey no readings on any of the instruments were observed.

During the drilling operations, the four above-mentioned instruments were used to continuously monitor any emissions emanating from the boreholes. No readings were observed at any of the borehole locations during the drilling activities.

4.4 Hydrogeology

Ground water is the primary source of potable water in the region and is considered a sole-source aquifer (Reference 6 Section 5). This source occurs in a wedged-shaped accumulation of unconsolidated sediments of Pleistocene and Upper Cretaceous age and overlies nearly impermeable bedrock, which consists of schists and gneisses.

The Cretaceous fluvial and deltaic deposits rest directly upon the clay-like weathered surface of precambrian bedrock, and are divided into the Raritan Formation and the overlying Magothy Formation. The Raritan Formation is composed of a lower sand member (Lloyd Sand Member) and a clay member, both of which are widely distributed on Long Island. The upper surface of the Lloyd sand member ranges from 200 to 900 feet below sea level and dips approximately 60 feet per mile to the southeast. The Lloyd sand member also ranges in thickness from 200 to 250 feet thick in most areas.

The clay member of the Raritan Formation serves as an effective confining unit for the Lloyd Sand Member. The top of the clay member ranges in depth from 70 to 700 feet below sea level and ranges from 0 to 200 feet thick averaging 150 feet in thickness.
The clay member also generally runs parallel to the underlying Lloyd Sand.

The Magothy Formation lies unconformably above the Raritan clay member and consists of a great thickness of alternating fine sands, clays, silts, and some coarse beds of sand and gravel. The top of the formation ranges from approximately 100 feet below sea level to 200 feet above sea level and ranges in thickness from 0 to 800 feet.

The Pleistocene glacial deposits which constitute the Upper Glacial aquifer unconformably overlie an irregular Magothy surface eroded and scoured by glacial contact. These deposits consist of an assortment of sands, gravels, and clays. This assortment of materials lends to the creation of perched water conditions as well as free flow of water to the lower aquifers underlying the region. These deposits range from 0 to 200 feet in depth and 0 to 320 feet thick.

Water-level measurements taken at the Site on April 18, 1991 (Table 2) indicate that the ground water is approximately 50 feet below grade and generally flows to the southeast (Figure 3).

Soil samples were taken from the screened zone of each well and analyzed for grain size. The results indicate that the screened zone for each well is primarily composed of sand with gravel and traces of silt. Results of the grain size analysis tests are presented in Appendix E.

One rising head slug test was conducted in each of the six monitoring wells installed at the Site. The slug tests were performed in accordance with Roux Associates Standard Operating Procedures (SOPs). For this investigation, the purpose of conducting slug tests was to estimate the hydraulic conductivity of the unconfined aquifer, without performing a constant-rate (pumping) test. During each slug test, time versus drawdown data were measured and continually recorded using a HERMIT™ SE2000 Environmental Data Logger, In Situ Inc., Laramie, Wyoming.

Roux Associates attempted to analyze the slug test data (Appendix F, Figures 4 through 9) from the Site monitoring wells, but the data could not be analyzed for the following reasons.

- Each of the six monitoring wells at the Site is screened within a prolific aquifer composed of medium to coarse sands and gravel. Even if the drawdown was sufficient to adequately stress the aquifer, prolific aquifers generally respond too quickly for slug tests to be performed, and slug-test data to be meaningful or analyzable.

- Each monitoring well installed at the Site has a casing diameter of 2 inches, with a borehole diameter of 10 inches. Since the borehole diameter is large in relation to the well diameter, a substantial amount of drawdown was needed to successfully stress the aquifer during a slug test. Due to the negligible maximum drawdown value (y_0) obtained during each slug test (Appendix F), it does not seem likely that the aquifer was affected by the stress (i.e., drawdown), and that all drawdown measured during each slug test took place within the gravel pack of each well.

- Although large slugs were used to displace water within each well (a 4-foot long slug was used in Wells MW-1 through MW-3, and an 8-foot long slug was used in Wells MW-4 through MW-6), not enough water could be displaced to impact the aquifer.

Thus any attempt to analyze the slug-test data would yield hydraulic conductivity (K) data characteristic of the gravel pack and not the aquifer formation.

According to published data, the average hydraulic conductivity (K) value for the upper glacial aquifer in southern Nassau County is 254 feet per day (ft/d), or 1,900 gallons per day per square foot (gpd/ft^2). The average K value for the entire upper glacial aquifer is similar (227 ft/d, or 1,700 gpd/ft^2). The average transmissivity (T) value for southern Nassau County is 12,700 ft^2/d, or 95,000 gpd/ft. The published average T value for the entire upper glacial aquifer is 26,740 ft^2/d, or 200,000 gpd/ft (Reference 5).

4.5 Ground-water Quality

Nine ground-water samples were collected from the six new monitoring wells installed at the site (MW-1 through MW-6) and two pre-existing wells on the Magnusonics property (MW-7 and MW-8). Note that no surveying information for these pre-existing wells was included in the scope of this investigation, therefore water elevations for MW-7 and MW-8 were not included on the ground-water elevation map, Figure 3. Sample MW-X was a blind duplicate of MW-6. The results of samples MW-6 and MW-X are comparable, which provides confidence in the analytical results. A summary of the analytical results can be found in Table 3. For evaluation, the analytical results were compared to the standards given in 6 NYCRR 703 tables (Appendix G).

Ref. 11, 15/50

Several volatile organic compounds were detected at low levels in the monitoring wells sampled in and around the Site. Acetone, methylene chloride, and xylene were all detected in the trip blank provided by the laboratory. Acetone and methylene chloride are common laboratory contaminants used in the cleaning of sample bottles and laboratory equipment. The origin of the xylene detection is unknown, but is most likely the result of laboratory contamination, since it was detected at concentrations similar to that found in the trip blank.

Ground-water level measurements taken on March 26, 1991 indicate that monitoring well MW-6 did not straddle the water table at the time of sampling. The concentrations found in samples taken from MW-6 are still believed to be accurate since no free phase floating product was observed in MW-6 or any other monitoring wells related to the Site.

1,1-Dichloroethane and 1,2-dichloroethene were both detected above the standard in monitoring well MW-6. 1,1-Dichloroethane was detected at 6 micrograms per liter (ug/l), above the New York State ground-water standard of 5 ug/l. 1,2 Dichloroethene was detected at 14 ug/l, above the New York State ground-water standard of 10 ug/l. Since monitoring well MW-6 only receives ground water from small a portion of the Site (Figure 3), and these compounds have not been detected in monitoring well MW-5 which is downgradient of MW-6, and does not appear to represent a significant release from the Site.

Three of the volatile organic compounds detected were found below the contract required detection limit of 5 micrograms per liter (ug/l). Tetrachloroethene and 1,1,2,2-tetrachloroethane were both found in monitoring well MW-6, at an estimated concentration of 1 ug/l. Trichloroethene was found in monitoring wells MW-5 and MW-6 at an estimated concentration of 2 ug/l. One unknown compound was detected in well MW-4 at 5 ug/l, and one unknown compound was detected in MW-8 at 20 ug/l.

The volatile organic compounds detected at the Site are denser than water. Since this is true, deeper wells could yield new information, but this cannot be stated for certain.

One semi-volatile organic compound, bis(2-ethylhexyl)phthalate, was detected at low concentrations in monitoring wells MW-1, MW-3, MW-6, and the trip blank. Bis(2-ethylhexyl)phthalate is a common laboratory contaminant. Several tentatively identified

 Ref. 11, 16/50

compounds (TIC's) were also detected in monitoring wells MW-1, MW-4, MW-6, MW-7, and MW-8.

No pesticides or PCB's were detected in any of the monitoring wells sampled at the Site.

A number of metals were found at concentrations above their respective detection limits in the monitoring wells sampled for the Site. Lead was detected above the New York State Ground-Water standard of 25 ug/l in two of the wells, MW-6 and MW-8, at 71.6 ug/l and 86.6 ug/l, respectively. Lead was also detected above the detection limit of 5 ug/l in the remaining wells ,MW-1, MW-2, MW-3, MW-4, MW-5, and MW-7, at 17.9 ug/l, 9.8 ug/l, 23.6 ug/l, 8.3 ug/l, 20.9 ug/l, and 11.1 ug/l, respectively.

Cadmium was detected above the New York State Ground-Water standard of 10 ug/l in MW-8 at 16 ug/l. It was also detected in MW-1, MW-4, MW-5 and MW-7 at 2 ug/l, 4 ug/l, 2 ug/l and 2 ug/l, respectively. Chromium was detected at the New York State Ground-Water standard of 50 ug/l in MW-3, and in MW-1, MW-4, MW-5, MW-6, MW-7 and MW-8 at 30 ug/l, 20 ug/l, 30 ug/l, 20 ug/l, 10 ug/l and 20 ug/l, respectively.

Aluminum, calcium, iron, magnesium, manganese, potassium, and sodium (all of which are common elements in ground water) showed high concentrations in relation to New York State Ground-Water Standards.

The frequency and consistency with which metals are detected above and below the ground-water standards can be attributed to the slightly lower than normal pH found in ground water at the Site. This slightly acidic condition results in dissolving metals into the ground water more readily than under balanced pH conditions.

4.6 Summary and Conclusions

In reviewing all of the ground-water quality data, it is apparent that the water quality in the upgradient wells (MW-1 and MW-6) is not significantly different from the water quality in the downgradient wells (MW-2 through MW-5) in terms of HRS scoring. If the constituents detected were the results of hazardous waste disposal, the levels would be expected to be considerably higher in all of the wells. However, since there is a record of hazardous

Ref. 11 17/50

substances being deposited at the Site, it is suggested that this round of water sampling be augmented by a second round of sampling. This monitoring may be continued for an unspecified period of time to determine if this deposition may affect the Site ground-water quality in the future. In addition, filtering the samples for metals analysis would provide more accurate results because there would not be interference with high suspended solids content.

Ref 11, 18/50

4.7 Site Assessment References

1) Swedalla, T., 1989. Interview Record with YEC, Inc., August 2, 1989.

2) Spettman, W.H., 1989. Interview Record with YEC, Inc., August 2, 1989.

3) Del Rosso, K., 1989. Interview Record with YEC, Inc., July 28, 1989.

4) Aiken, D., 1974. NCDOH Site Inspection Reports.

5) NYSDEC Site Inspection Reports of the AGO Associates Site from October, 1978 to December, 1979 (Source: NYSDEC Bureau of Municipal Wastes, Albany, New York).

6) NYSDEC Soil Sampling Results and Related Memorandum from Robert Olazagasti (New York State Department of Environmental Conservation) to John Rankin, February 9, 1988, (Source: NYSDEC Division of Solid Waste, Stony Brook, New York).

7) McClymonds, N.E., 1972, and O.L. Franke, 1972. Water-Transmitting Properties of Aquifers on Long Island, New York (Roux Associates, Inc. files).

Ref. 11, 19/50

5.0 FINAL APPLICATION OF HAZARD RANKING SYSTEM

5.1 Introduction

The Hazard Ranking System has been applied incorporating the new data obtained during the Phase II investigation. The final scores calculated are:

Sm = No Score

Sgw = No Score

Ssw = 0

Sa = 0

Sfe = Not Scored

Sdc = 0

The purpose of the HRS scoring is to rank the Site in comparison to other New York State Superfund sites, on a list of priorities, and/or to classify the Site.

Ref. 11, 20130

5.2 HRS Work Sheets

Facility name: AGO Associates

Location: Hicksville, Nassau County, New York

EPA Region: II

Person(s) in charge of the facility: Frank Lizza

Twin County Recycling Corp.

499 West John St., Hicksville, New York 11801

Name of Reviewer: Eric Arnesen Date: 6/91

General description of the facility:
(For example: landfill; surface impoundment; pile; container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The Site is a former landfill ~14.4 acres with the property divided into five separate commercial properties. The Site is located on West Johns Street in Hicksville, New York. The landfill was inspected monthly by the NCDOH, which discovered illegally stored drums containing industrial solvents. Other violations included improper spreading and compaction of refuse, smoldering fires, and rodent infestation. In 1976 the Town of Oyster Bay charged AGO Associates with illegal salvage operations and storage of heavy equipment at the Site. The landfill was closed in January of 1979.

Scores: S_M = NS (S_{GW} = NS S_{SW} = 0 S_A = 0)

S_{FE} = Not Scored

S_{DC} = 0

Note: NS = No Score

Ref. 11, 21150

The Ground Water Route cannot be scored since the toxicity/persistence of the hazardous waste cannot be determined. This is because there is no analytical data to determine the wastes composition.

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer Concern	0 1 2 3	2	6	6	
Net Precipitation	0 1 2 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	3	3	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		14	15	
3 Containment	0 1 2 3	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	NS	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		NS	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	30		
	Total Targets Score		39	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			NS	57,330	
7 Divide line 6 by 57,330 and multiply by 100	S_{GW}=		NS		

Ref. 11, 22/30

Surface Water Route Work Sheet					
Rating Factor	**Assigned Value (Circle One)**	**Multi-plier**	**Score**	**Max. Score**	**Ref. (Section)**
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	0	6	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		5	15	
3 Containment	0 1 2 3	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	NS	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		NS	26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3	0	9	
Distance to a Sensitive Environment	0 1 2 3	2	0	6	
Population Served/ Distance To Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		0	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{SW}=	0		

Ref. 11, 23/50

Air Route Work Sheet						
Rating Factor	**Assigned Value (Circle One)**	**Multi-plier**	**Score**	**Max. Score**	**Ref. (Section)**
1 Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_A = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1	NS	3	
Toxicity	0 1 2 3	3	NS	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7	1	0	8	
	Total Waste Characteristics Score		NS	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1	24	30	
Distance to Sensitive Environment	0 1 2 3	2	0	6	
Land Use	0 1 2 3	1	3	3	
	Total Targets Score		27	39	
4 Multiply 1 x 2 x 3			0	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_A =	0		

Ref. 11, 24/50

	S	S^2
Groundwater Route Score (S_{gw})	NS	NS
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S^2gw + S^2sw + S^2a$	NS	NS
$\sqrt{S^2gw+S^2sw+S^2a}$	NS	NS
$\sqrt{S^2gw+S^2sw+S^2a}$ / 1.73 = S_M	NS	NS

Ref 11, 25/50

S_{FE} is scored only if a Fire Marshall has certified the Site as a threat of fire or explosion due to hazardous wastes at the Site. Since this is not true, S_{FE} is not scored.

Fire and Explosion Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitibility	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within	0 1 2 3 4 5	1		5	
	Total Targets Score			24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = Not Scored			

Ref. 11, 26150

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 . If line 1 is 0, proceed to line 2 .					
2 Accessibility	0 1 2 3	1	3	3	8.2
3 Containment	0 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	NS	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	20	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
	Total Targets Score		20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC}=	0		

Ref. 11, 27/50

5.3 Documentation Records for Hazard Ranking System

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible, summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: AGO Associates

LOCATION: Hicksville, Nassau County, New York

DATE SCORED: June, 1991

PERSON SCORING: Eric Arnesen of Roux Associates, Inc.

PRIMARY SOURCE(S) OF INFORMATION: YEC, Inc. Phase I Report, NYSDEC Files, NCDOH Files, Roux Associates, Inc. Phase II Investigation

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (45 maximum):

None

Rationale for attributing the contaminants to the facility:

N/A
Assigned Value = 0

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Upper Glacial and Magothy aquifers. The Upper Glacial and the Magothy aquifers are hydraulically connected. (Reference 1).

Depth(s) from the ground surface to the highest seasonal level of the saturated zone (water table(s)) of the aquifer of concern:

~55 feet (water level measurements, Table 2)

Depth from the ground surface to the lowest point of waste disposal/storage:

~45 feet (Reference 2)
~10 feet between waste and water table
Assigned Value = 3

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

45 inches average annual (HRS Users Manual)

Mean annual lake or seasonal evaporation (list months for seasonal):

30 inches average annual (HRS Users Manual)

Net precipitation (subtract the above figures):

15 inches (Reference HRS Users Manual)
Assigned value = 2.

Ref. 11, 29100

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Sand and gravel (Geologic Logs, Appendix C, and Geotechnical Testing Report for AGO Landfill, Appendix E).

Permeability associated with soil type:

Moderate to high (HRS Users Manual).
Greater than 10^{-3} cm/sec.
Assigned value = 3

Physical State

Physical state of substances at time of disposal (or at present for generated gases):

Liquid

Record from NCDOH that over 100 drums were located at the Site and contained industrial solvents, lacquers, and thinners.

Assigned value = 3
(Reference 3)

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner (Reference 4)

Method with highest score:

Landfill, no liner.
Assigned Value = 3

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Since possibly hazardous substances have been observed to have been deposited at the Site, but no analysis was done to determine their exact composition not enough information exists to properly score this section of the Ground Water Route sheet. (Reference 5) Also all drums were removed and any spillage cleaned up. Nothing relating to these substances was observed in ground water.

Compound with highest score:

N/A
Assigned Value = NS

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (give a reasonable estimate even if quantity is above maximum):

~100 drums of possibly hazardous substances have been deposited at the Site. These were later removed as well as contaminated soils. However, the number of leaking drums is unknown but it is documented that some amount of minimal leaking has occurred.

Assigned value = 1
(Reference 3)

Basis of estimating and/or computing waste quantity:

~100 drums were observed at the Site. (Reference 3)

5. TARGETS

Ground Water Use
Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

The Upper Glacial and Magothy aquifers are designated sole source aquifers (Reference 6). Domestic and commercial/industrial uses.
Assigned value = 3

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Hicksville water district plant. (Reference 7)

Distance to above well or buildings:

~1.21 miles. Assigned value = 2.

Population Served by Ground-Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Ref. 11, 31/50

	Population
Jericho Water District -	67,000 served
Hicksville Water District -	47,810 served
Plainview Water District -	35,000 served
Levittown Water District -	48,749 served
Bowling Green Water District -	12,000 served
Westbury Water District -	20,050 served
Old Westbury Village Water District -	3,300 served

(Reference 8)

Population served by ground water:

Total of Population Served: 233,909 served Assigned value = 5 Matrix value = 30

Computation of land area irrigated by supply well(s) drawing from aquifers of concern within a 3-mils radius, and conversion to population (1.5 people per acre):

There are private wells used for irrigation. Most likely for the local golf course, but exact numbers are not provided. (Reference 9)

Total population served by ground water within a 3-mile radius:

233,909 served
Assigned Value = 5

Ref 11, 29/30

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

None. There are no surface water bodies within a 3-mile radius of the Site.
Assigned Value = 0

Rationale for attributing the contaminants to the facility:

N/A

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility and intervening terrain in percent:

0-2% (Reference 10)
Assigned Value = 0

Name/description of nearest downslope surface water:

N/A

Is the facility located either totally or partially in surface water?

No.

Is the facility completely surrounded by areas of higher elevation?

No. (Reference 11)

1-Year, 24-Hour Rainfall in Inches

~2.7 inches (HRS Scoring Manual)
Assigned value = 2

Distance to Nearest Downslope Surface Water

N/A there is not downslope surface water within 3-mile radius (Reference 11)
Assigned Value = 0

Physical State of Waste

Liquid (Reference 3)
Assigned Value = 3

Ref. 11, 33/50

3. CONTAINMENT

Method(s) of waste or leachate containment evaluated:

Landfill and containers

Method with highest score:

Containers, spillage assumed to have occurred from leaking drums. (Reference 3)
Assigned Value = 3

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

No score (NS)
Since possibly hazardous substances have been observed to have been deposited at the Site, but no analysis was done to determine their exact composition not enough information exists to properly score this section of the Surface Water Route sheet. (Reference 5)

Compound with highest score:

N/A
Assigned Value = NS

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (give a reasonable estimate even if quantity is above maximum:

~100 drums of possibly hazardous substances have been deposited at the Site. These were later removed as well as contaminated soils. The exact number of leaking drums is unknown, but some minimal leaking has been documented to have occurred.

Assigned value = 1
(Reference 3)

Basis of estimating and/or computing waste quantity:

~100 drums were observed at the Site. (Reference 3)

5. TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

None. No surface water bodies downslope of Site. (Reference 11)
Assigned value = 0

Is there a tidal influence?

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The Site is in central Nassau County and is over 3-miles from the north and south shorelines. (Reference 12).
Assigned value = 0

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None
Reference 12.
Assigned value = 0

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None. The ones identified are not within a one-mile radius. (Reference 13).
Assigned value = 0

Populations Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None.
Reference 11.

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Land area irrigated by surface water intake(s):

N/A

Ref. 11, 35/50

Total Population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to surface water intakes:

N/A

Ref. 11, 36/150

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

None

Date and location of detection of contaminants:

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Not known.

Most incompatible pair of compounds:

Not known.
Assigned Value = NS

Toxicity

Most toxic compound:

Not known.
Assigned Value = NS

Hazardous Waste Quantity

Total quantity of hazardous waste:

~100 drums

Basis of estimating and/or computing waste quantity:

Evidence of ~100 drums at the Site (Reference 3)
Assigned Value = 2

3. TARGETS

Population Within 4-Mile Radius

Give radius used, give population, and indicate how determined:

Population with a 1 mile radius ~16,000 (Reference 15)
Assigned Value = 24

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland:

None. (Reference 12)

Distance to a 5-acre (minimum) freshwater wetland:

None. (Reference 13)

Distance to critical habitat of an endangered species: N/A

None. (Reference 14)
Assigned Value = 0

Land Use

Distance to commercial/industrial area, if 1 mile or less:

0 miles. The Site is in a highly commercial and industrial area (Reference 1)
Assigned Value = 3

Distance to national or state park, forest, wildlife reserve:

None
Assigned Value = 0

Distance to residential area, if 2 miles or less:

South of the Site ~ 0.25 miles away

Distance to agricultural land in production within past 5 years, if 1 mile or less:

None

Ref. 11, 38/50

Assigned value = 0

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

None
Assigned value = 0

Is a historic or landmark site (National Register of Historic Places and National Natural Landmarks) within the view of the site?

None (Reference 14)
Assigned value = 0

Ref. 11, 39/50

FIRE AND EXPLOSION

The local Fire Marshal has declared that the Site does not pose a threat of fire or explosion, and therefore this route (S_{FE}) is not scored (Reference 16).

1. CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitibility

Compound used:

Reactivity

Incompatibility

Incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

4. TARGETS

Distance to Nearest Population

Ref. 11, 40150

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 miles or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

Ref. 11, 41/50

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None
Assigned value = 0

2. ACCESSIBILITY

Describe type(s) of barrier(s):

Area is fenced except for the southern boundary bordering the Long Island Rail Road
Assigned value = 3 (Reference 10)

3 CONTAINMENT

Type of Containment:

Drum scattered around Site and leaking but have since been removed with contaminated soil. (Reference 3)
Assigned value = 0

4. WASTE CHARACTERISTICS

Toxicity

The composition of possibly hazardous substances is unknown since no analytical testing has been performed (Reference 15).

Compound with highest score:

Not known.
Assigned Value = 0

5. TARGETS

Population within one-mile radius

~16,000
(Reference 15)
Assigned value = 5

Reg. 11, 42150

Distance to critical habitat (of endangered species)

None.
(Reference 14)
Assigned value = 0

Ref. 11, 43/50

5.4 HRS Documentation References

(1) Isbister, J. 1966 Geology and Hydrology of Northeastern Nassau County, Long Island, New York. USGS Water-Supply Paper 1825 (Location: Roux Associates, Inc. Files).

(2) Andromidas, C.J., 1989. Interview record with YEC, Inc., July 27, 1989 (Attached).

(3) Aiken, D. 1974. NCDOH Site Inspection Reports (Attached).

(4) NCDOH and NYSDOH, Bureau of Toxic Substance Assessment, Hazardous Waste Site Inspection Report for A.G.O. Associates, March 24, 1987 (Location: NYSDOH Files).

(5) Juczak, S. 1989., Interview of Stanley Juczak of NCDOH by YEC, Inc. Personnel (Attached).

(6) USEPA, 1990. Fact Sheet, Sole-Source Aquifers in Region II (Attached).

(7) Hicksville Water District, January, 1978 Hicksville Water District Plan of Distribution (Location: Roux Associates Files).

(8) NCDOH, 1990. Listing of Wells and Populations served within a three mile radius of the A.G.O. Site. (Attached).

(9) Myott, D.H., 1989, Letter to Marie F. McDonnel of Yec, Inc. Regarding Ground-Water Supply wells in the region of the A.G.O. Landfill Site. (Attached).

(10) YEC, Inc., 1989. Site Inspection Report February 3, 1989 (Attached).

(11) USGS Freeport and Hicksville Topographic 7.5 Minute Quadrangle (Attached).

(12) Rand McNally Road Atlas, 1986, Southern New York Region (Attached).

(13) Buffington, B. 1990. Letter to Eric Arnesen of Roux Associates, Inc. regarding endangered species in the region of the A.G.O. Landfill Site (Location: NYSDEC Files).

(14) Long Island Regional Planning Board, 1980. Census Tract for Nassau and Suffolk Counties, 1980. (Attached).

(15) Dvirka and Bartilucci, 1986. Investigation of Contaminated Aquifer, Segments, Nassau County, New York. (Attached).

(16) Magee, R.A., 1991. Nassau County Fire Commission, Office of the Fire Marshall, Fire Marshall's Report Update, June 10, 1991 (Attached).

(17) McClymonds, N.E. and O.L. Franke, 1972. Water-Transmitting Properties of Aquifers on Long Island, New York (Location: Roux Associates, Inc. Files).

Table 1. Monitoring Well Construction Details, AGO Associates, Hicksville, New York.

Well Number	Bottom of Boring (ft below land surface)	Screened Zone (ft below land surface)	Elevation of Measuring Point (ft relative to a commom datum)	Height of Measuring Point (ft)*	Land Surface Elevation (ft relative to a commom datum)	Well Diameter (inches)
MW-1	60.00	48.70 - 58.70	74.11	-0.45	74.56	2
MW-2	70.00	56.25 - 66.25	82.84	2.24	80.60	2
MW-3	70.00	57.46 - 67.49	82.83	2.53	80.30	2
MW-4	65.00	49.45 - 59.45	73.66	-0.41	74.07	2
MW-5	65.00	49.82 - 59.82	76.58	2.68	73.90	2
MW-6	65.00	52.55 - 62.55	77.33	-0.25	77.58	2

* - Measurement from land surface to measuring point.

NOTE: All measurements are taken from a common datum in an arbitrary system.

GH07710Y

Set II, 49/50

Table 2. Water Level Measurements Taken on March 11, 1991 and April 18, 1991, AGO Associates, Hicksville, New York.

Well Number	Elevation of Measuring Point (ft relative to a common datum)	March 11, 1991		April 18, 1991		
		Depth to Water (ft below measuring point)	Elevation of Water Table (ft relative to a common datum)	Depth to Water (ft below measuring point)	Elevation of Water Table (ft relative to a common datum)	Change (ft) March 11 - April 18, 1991
MW-1	74.11	48.90	25.21	50.04	24.07	-1.14
MW-2	82.84	60.41	22.43	59.92	22.92	+0.49
MW-3	82.83	60.09	22.74	60.19	23.04	-0.10
MW-4	73.66	50.76	22.90	51.24	22.42	-0.48
MW-5	76.58	54.50	22.08	54.50	22.08	0.00
MW-6	77.33	53.77	23.56	54.22	23.11	-0.45

NOTE: All elevations are taken from a common datum in an arbitrary system.

Table 3. Summary of Ground-Water Analytical Data for Samples Collected on March 26 and 27, 1991, AGO Associates, Hicksville, New York.

Well Designation: (All sample concentrations in ug/L)	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-X*	MW-7	MW-8	6 NYCRR 703 Ground-Water Standard (unless otherwise specified)
VOLATILE ORGANIC COMPOUNDS***										
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	1 BJ	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	6	6	ND	ND	5
1,2-Dichloroethene (Total)	ND	ND	ND	ND	ND	14	15	ND	ND	5
Acetone	ND	ND	6 J	ND	ND	ND	ND	ND	4 BJ	5
Methylene chlordie	2 BJ	2 BJ	2 BJ	2 BJ	ND	ND	ND	ND	ND	5
Tetrachloroethene	ND	ND	ND	ND	ND	1 J	1 J	ND	ND	5
Trichloroethene	ND	ND	ND	ND	2 J	2 J	2 J	ND	ND	5
Xylene (Total)	ND	ND	ND	ND	ND	ND	ND	ND	1 BJ	5
Tentatively Identified Compounds**										
Unknown	ND	ND	ND	5	ND	ND	ND	ND	20	
SEMIVOLATILE ORGANIC COMPOUNDS***										
bis (2-Ethylhexyl) phthalate	4 BJ	ND	21 B	ND	ND	ND	22 B	ND	ND	4,200
Tentatively Identified Compounds**										
Unknown alcohol	20	ND	ND	ND	ND	10	ND	ND	ND	
Unknown alcohol	20	ND	ND	ND	ND	ND	ND	ND	ND	
Unknown alcohol	20	ND	ND	ND	ND	ND	ND	10	ND	
Unknown	ND	ND	ND	80	ND	10	10	70	100	
Unknown	ND	ND	ND	ND	ND	60	10	ND	ND	
Unknown	ND	ND	ND	ND	ND	60	60	ND	ND	
Unknown	ND	ND	ND	ND	ND	ND	60	ND	ND	
PESTICIDES AND PCBs	ND	ND	ND	ND	ND	ND	ND	ND	ND	

* - Duplicate of MW-6
** - Estimated concentration
*** - Compounds not detected are not listed.
ND - Not detected
B - Found in Field Blank
J - Value is less than contract detection limit but greater than instrument detection limit.
NS - No standard

GH07710Y

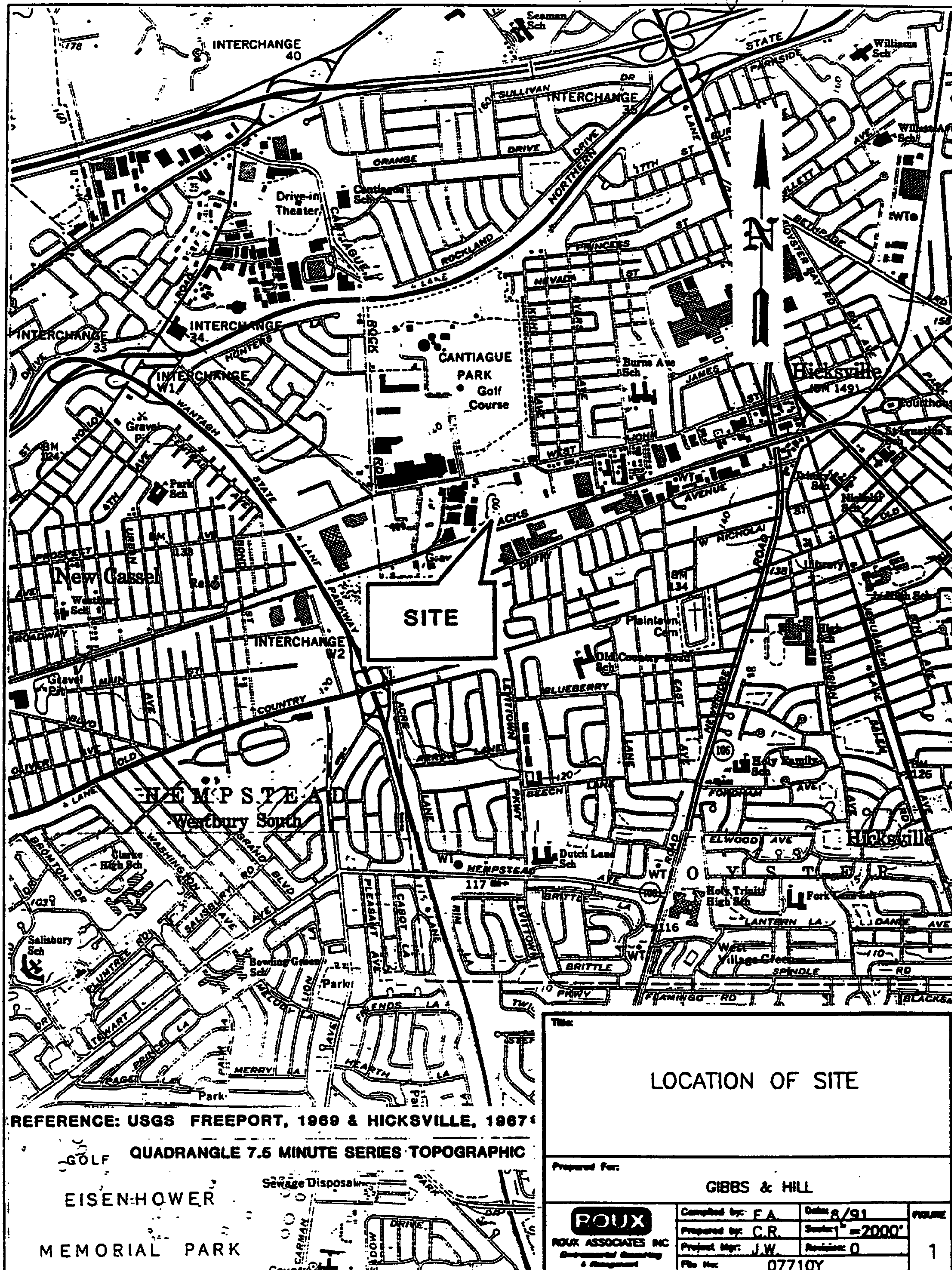
Table 3. Summary of Ground-Water Analytical Data for Samples Collected on March 26 and 27, 1991, AGO Associates, Hicksville, New York.

Well Designation: (All sample concentrations in ug/L)	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-X*	MW-7	MW-8	6 NYCRR 703 Ground-Water Standard (unless otherwise specified)
METALS***										
Aluminum	23900	6120	41700	16500	36000	25400	116000	313	7810	NS
Antimony	ND	ND	ND	ND	70.7	ND	39.4 K	ND	ND	NS
Arsenic	8.2 K	ND	6.8 K	ND	5.4 K	3.4 K	8.6 K	ND	23.4	25
Barium	434	71.7 K	269	281	342	421	1060	67.9 K	180 K	1000
Beryllium	1.5 K	ND	4.0 K	2.4 K	2.6 K	2.7	6.3	ND	1.2 K	NS
Cadmium	2.0 K	ND	ND	4.0 K	2.0 K	ND	5.0	2.0 K	16	10
Calcium	34500	28400	97300	80800	59200	82700	81600	25000	52400	NS
Chromium	30	ND	50	20	30	20	90	10	20	50
Cobalt	22.1 K	ND	21.4 K	15.8 K	22.8 K	59.7	92.6	ND	ND	NS
Copper	49.6	28.4	65.4	53.4	40.7	107	138	111	127	200
Iron	35400	7770	70400	12600	28400	48000	108000	950	24900	300
Lead	17.9	9.8	23.6	8.3	20.9	71.6	209	11.1	86.6	25
Magnesium	7040	2590 K	22000	17300	7870	23000	25900	4770 K	22000	NS
Manganese	753	147	1840	2320	2040	14900	14800	425	4500	300
Mercury	ND	ND	ND	ND	ND	0.20	0.80	ND	ND	2
Nickel	28.3 K	ND	21 K	ND	19.7	72.3	121	ND	35.8 K	NS
Potassium	7040	3970 K	15800	10900	14200	8260	11800	4060	104000	NS
Selenium	0.90 K	ND	0.50 K	3.5 K	0.55 K	ND	0.90 K	0.50 K	0.50 K	10
Sodium	167000	17100	44900	33600	44100	21900	21700	16600	68800	NS
Vanadium	37.6 K	ND	56.2	18.3	42 K	34.1 K	118	ND	21 K	NS
Zinc	74.9	34.9	79.4	37.4	46.7	196	326	85.2	138	300
PHYSICAL PARAMETERS										
COD (mg/L)	210	25	60	50	50	60	50	60	80	
Specific Conductance (umhos)	1530	272	883	803	681	790	744	769	1150	
pH (units)	6.2	6.3	6.9	6.6	6.7	6.4	6.3	8.4	7.2	
Suspended Solids (mg/L)	1050	4240	610	408	961	2110	2360	79	211	
Total Dissolved Solids (mg/L)	815	150	497	451	388	493	420	402	659	

* - Duplicate of MW-6
** - Estimated concentration
*** - Compounds not detected are not listed.
ND - Not detected
B - Found in Field Blank
K - Value is less than specified quantitation limit but greater than zero.
NS - No standard

Ket 11, 47/50

Ref. 11, 46/50



REFERENCE: USGS FREEPORT, 1969 & HICKSVILLE, 1967
QUADRANGLE 7.5 MINUTE SERIES TOPOGRAPHIC

Title:

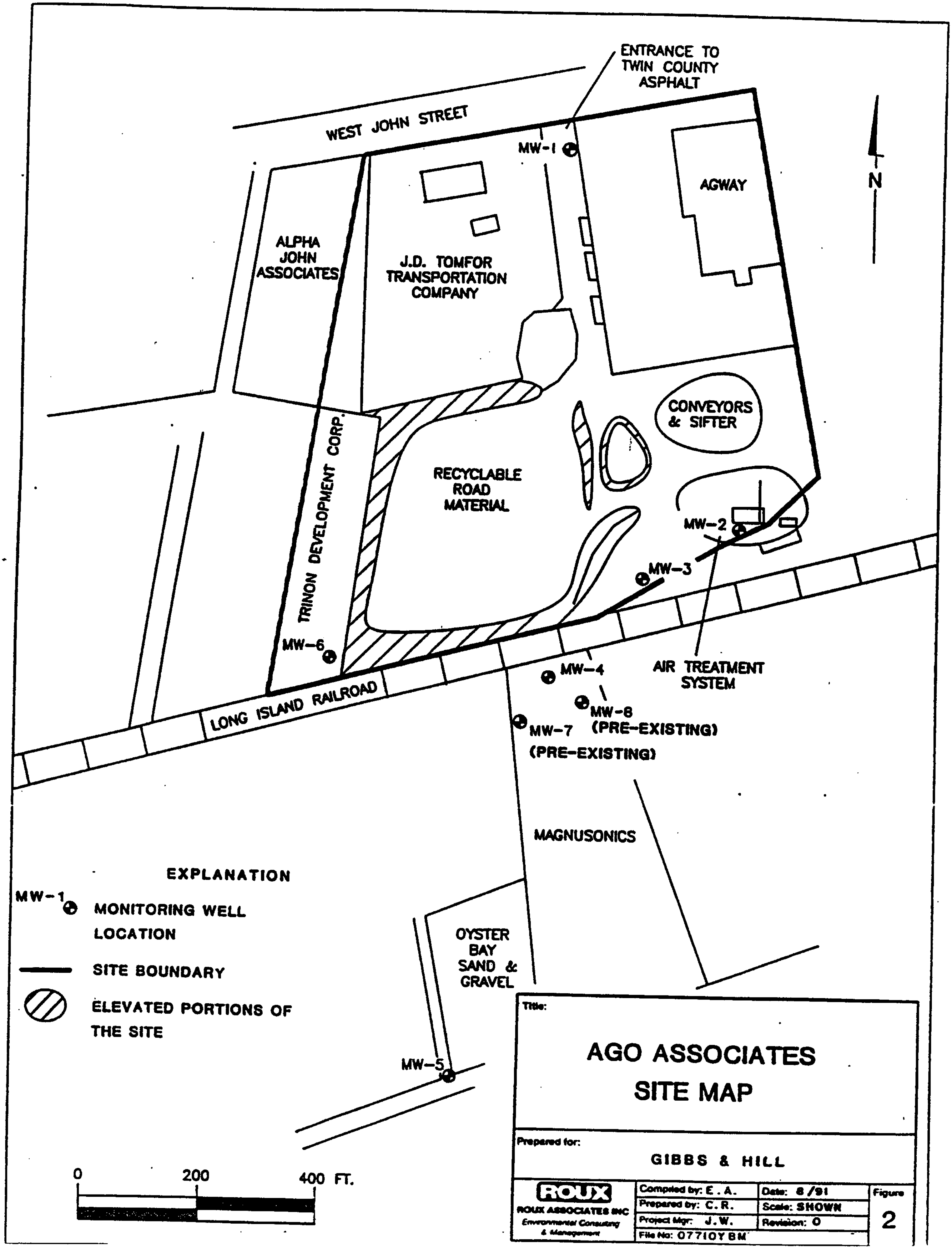
LOCATION OF SITE

Prepared For:

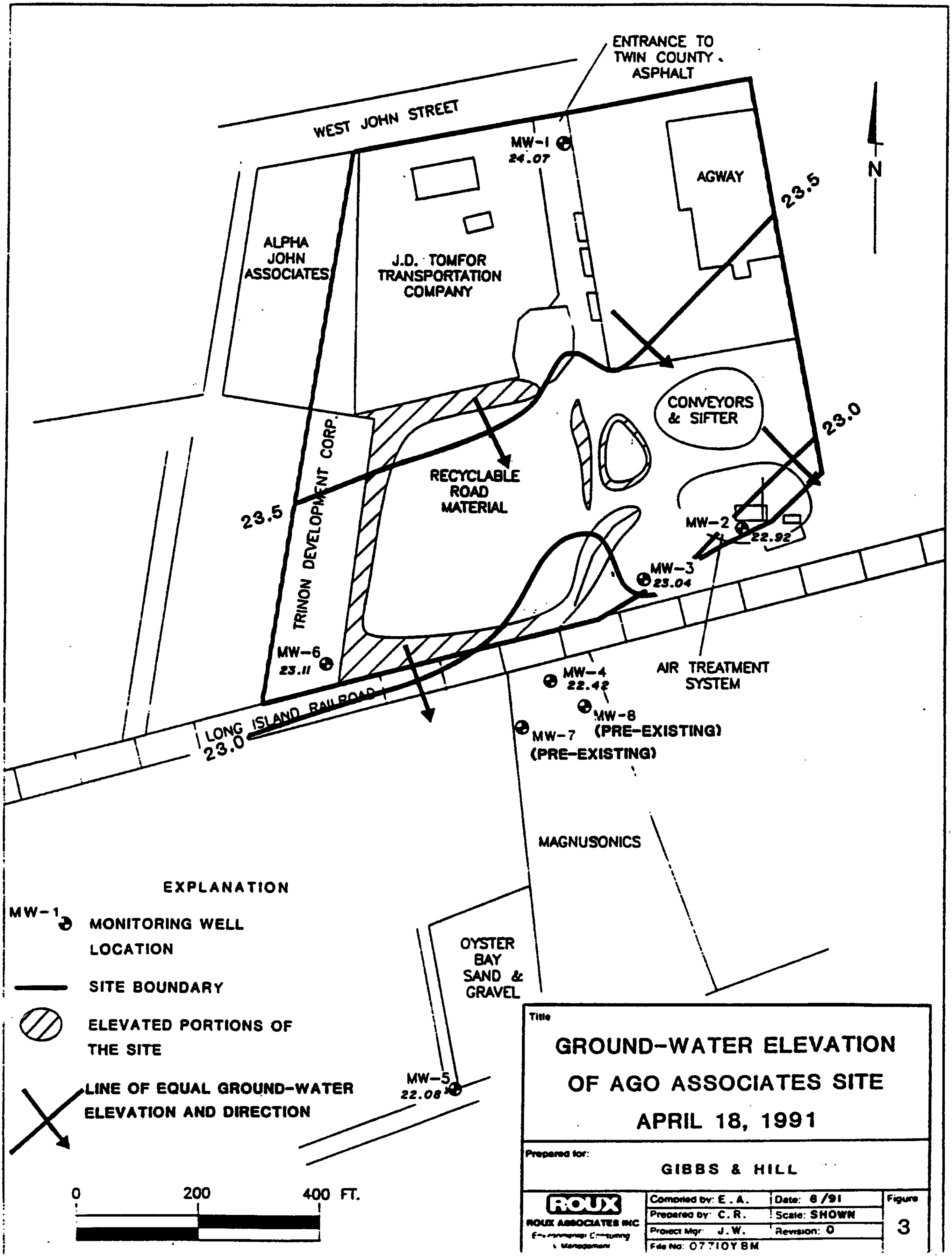
GIBBS & HILL

ROUX ASSOCIATES INC Environmental Consulting & Management	Compiled by: F.A.	Date: 8/91	FIGURE	1
	Prepared by: C.R.	Scale: 1" = 2000'		
	Project Mgr: J.W.	Revision: 0		
	File No: 07710Y			

KG4.11, 49/56


ENTRANCE TO TWIN COUNTY ASPHALT
WEST JOHN STREET
MW-1
AGWAY
N
ALPHA JOHN ASSOCIATES
J.D. TOMFOR TRANSPORTATION COMPANY
TRINON DEVELOPMENT CORP.
RECYCLABLE ROAD MATERIAL
CONVEYORS & SIFTER
MW-2
MW-3
MW-6
MW-4
AIR TREATMENT SYSTEM
LONG ISLAND RAILROAD
MW-8 (PRE-EXISTING)
MW-7 (PRE-EXISTING)
MAGNUSONICS
OYSTER BAY SAND & GRAVEL
MW-5
EXPLANATION
MW-1 MONITORING WELL LOCATION
SITE BOUNDARY
ELEVATED PORTIONS OF THE SITE
0
200
400 FT.
Title:
AGO ASSOCIATES
SITE MAP
Prepared for:
GIBBS & HILL
ROUX
ROUX ASSOCIATES INC
Environmental Consulting & Management
Compiled by: E. A.
Prepared by: C. R.
Project Mgr: J. W.
File No: 07710YBM
Date: 8 /91
Scale: SHOWN
Revision: 0
Figure
2

KG-11, 50/50

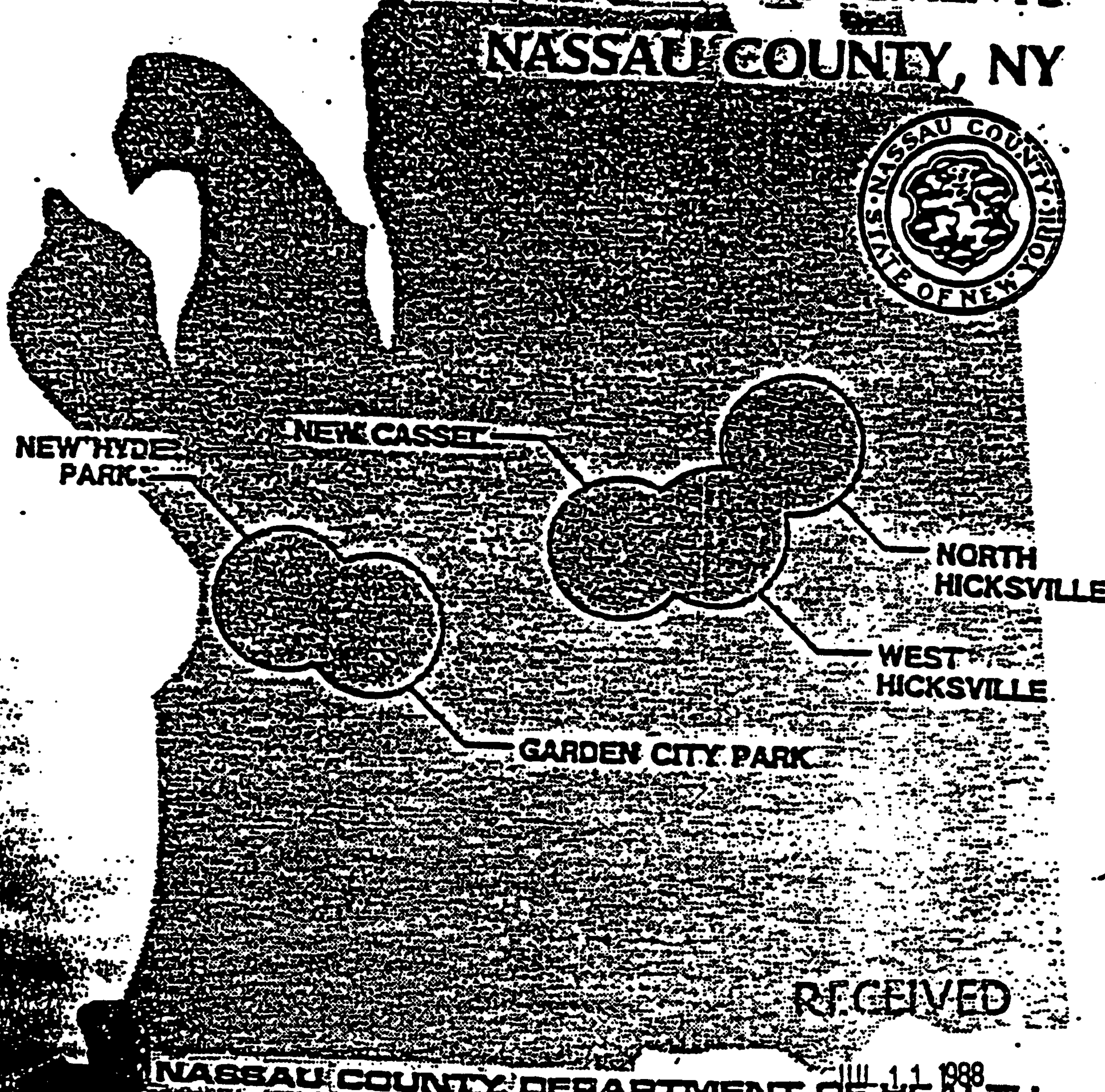


ENTRANCE TO TWIN COUNTY ASPHALT
WEST JOHN STREET
MW-1 24.07
AGWAY
N
23.5
ALPHA JOHN ASSOCIATES
J.D. TOMFOR TRANSPORTATION COMPANY
CONVEYORS & SIFTER
23.0
TRINON DEVELOPMENT CORP.
RECYCLABLE ROAD MATERIAL
23.5
MW-2 22.92
MW-3 23.04
MW-6 23.11
MW-4 22.42
AIR TREATMENT SYSTEM
LONG ISLAND RAILROAD
23.0
MW-8 (PRE-EXISTING)
MW-7 (PRE-EXISTING)
MAGNUSONICS
EXPLANATION
MW-1 MONITORING WELL LOCATION
SITE BOUNDARY
ELEVATED PORTIONS OF THE SITE
LINE OF EQUAL GROUND-WATER ELEVATION AND DIRECTION
OYSTER BAY SAND & GRAVEL
MW-5 22.08
0
200
400 FT.
Title
GROUND-WATER ELEVATION OF AGO ASSOCIATES SITE
APRIL 18, 1991
Prepared for:
GIBBS & HILL
ROUX
ROUX ASSOCIATES INC
Environmental Consulting & Management
Compiled by: E. A.
Prepared by: C. R.
Project Mgr: J. W.
File No: 07710YBM
Date: 8/91
Scale: SHOWN
Revision: 0
Figure 3

REFERENCE 12

KCT 10, 1103

INVESTIGATION OF CONTAMINATED AQUIFER SEGMENTS NASSAU COUNTY, NY



RECEIVED

JUL 11 1988

NASSAU COUNTY DEPARTMENT OF HEALTH

AND

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
SYOSSET, NEW YORK

Kct. 12, 2100

INVESTIGATION OF CONTAMINATED AQUIFER SEGMENTS

NASSAU COUNTY, NEW YORK

JUNE 1986

NASSAU COUNTY DEPARTMENT OF HEALTH

AND

DVIRKA AND BARTILUCCI, CONSULTING ENGINEERS
SYOSSET, NEW YORK

Ref. 12, 3/33

It is probable that the majority of groundwater contamination in Garden City Park originates from an industrial area along and west of Herricks Road and north of the Long Island Railroad. Although upgradient wells do not isolate the area source of contamination, downgradient wells essentially all exhibit contamination (greater than 100 ug/l total volatile organics). Other sources located in industrial areas along the railroad, however, may also be contributing factors.

The one existing water supply well in the immediate vicinity of the study area is slightly contaminated with organic compounds (10 ug/l). Although data is limited with regard to deep monitoring wells in this area, one monitoring well 100 feet below the surface indicates that the upper Magothy shows significant contamination (up to nearly 200 ug/l total organic compounds). Since Garden City Park is part of the Magothy recharge area, there is the potential for further contamination of water supply in the future.

o West Hicksville - Some significant (maximum of 6,800 ug/l) and extensive contamination of groundwater was found in the area of West Hicksville. Although there are no upgradient monitoring wells, it appears based on land use that contamination is originating from the industrial area along West John Street and Duffy Avenue parallel to the Long Island Railroad. A number of

Ref. 12, 4133

waste disposal violations and spills have been reported in this area. Based on data obtained from deep monitoring wells in the area, contamination (approximately 2,700 ug/l total volatile organics) has migrated into the Magothy aquifer up to 265 feet below the surface. Although no water supply wells within and downgradient of the study area are presently contaminated with organic chemicals, there is a potential threat to water supply wells in the Bowling Green Water District. Clay layers that would impede contaminant migration are identified in deeper wells in West Hicksville, however, the stratigraphic continuity is unknown.

- New Hyde Park - Significant, but limited contamination of groundwater has been reported for existing wells in this area (maximum of 3,600 ug/l). Wells installed as part of this project detected little or no contamination. There is substantial industrial land use in New Hyde Park that could be contributing to groundwater contamination. Additional information is needed at this site to determine sources and extent of the contamination.

There were no deep monitoring wells installed as part of this investigation in the New Hyde Park area; therefore, there is limited data with regard to vertical contaminant migration and contamination of the upper Magothy aquifer. However,

Ref. 12, 5/33

CONTAMINATION CATEGORIES FOR ORGANIC CHEMICALS

Category	Total Volatile Organics* (ug/l)	Individual Chemicals* (ug/l)
Ambient/Near Ambient	ND-10	ND-5
Contaminated	10-100	5-50
Significant Contamination	100-1000	50-500
Gross Contamination	>1000	>500

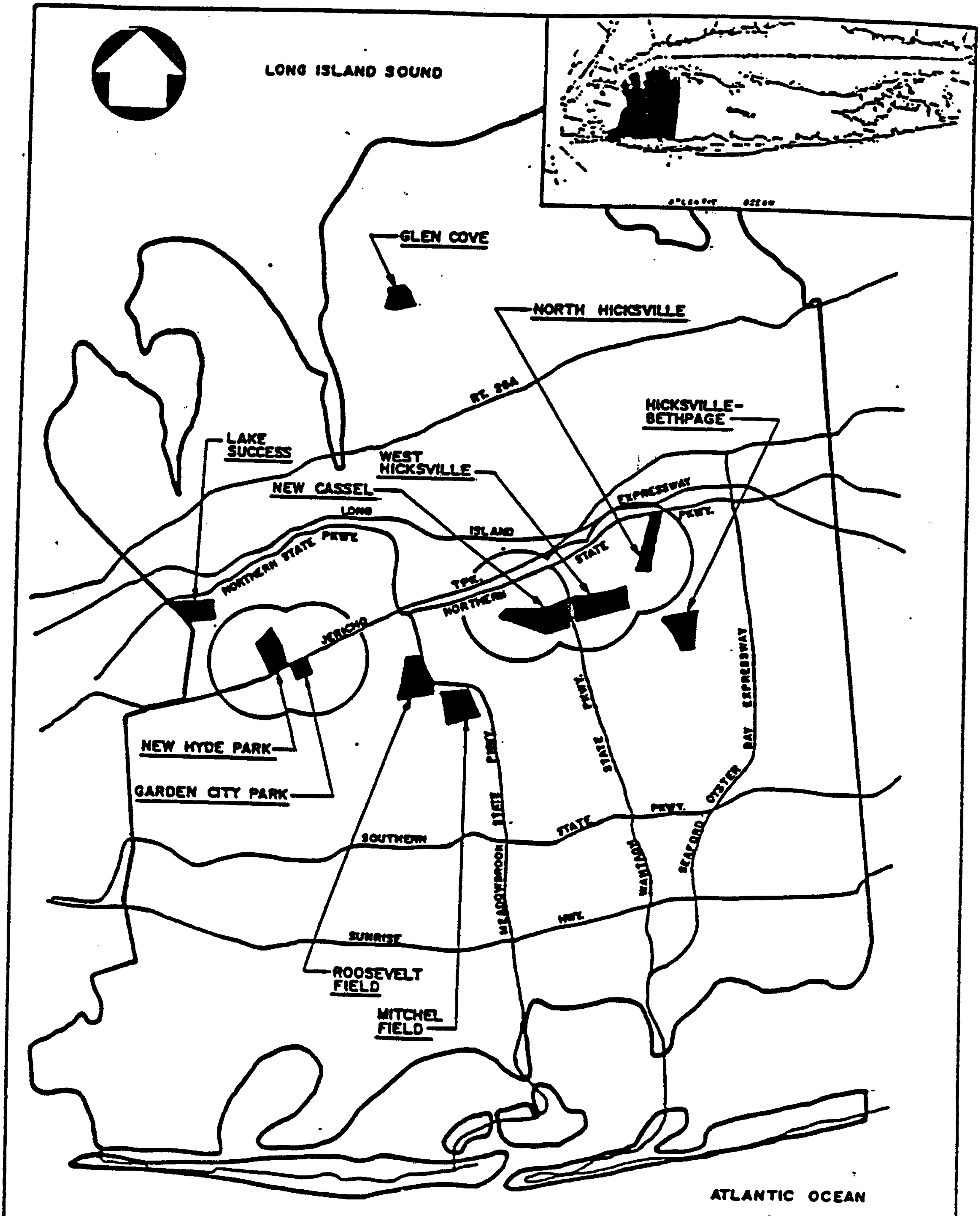
*Drinking Water Guideline (100 ug/l for total volatile organics and 50 ug/l for an individual compound except for benzene and vinyl chloride for which the guideline is 5 ug/l)

As a result of this evaluation and chemical inventory information obtained from industrial surveys conducted by NCDH, ten areas of significant groundwater contamination by organic chemicals were identified in Nassau County. These areas are:

1. Mitchel Field
2. Roosevelt Field
3. Glen Cove
4. Hicksville-Bethpage
5. Lake Success
6. North Hicksville
7. West Hicksville *
8. New Cassel
9. New Hyde Park
10. Garden City Park

Locations of these areas are shown in Figure 1-1.

Ref. 12, 6133



Dvirka and Bartilucci CONSULTING ENGINEERS

LOCATION OF SITES OVERLYING CONTAMINATED AQUIFER SEGMENTS IN NASSAU COUNTY

FIGURE NO. 1-1

Kit.1a, +133

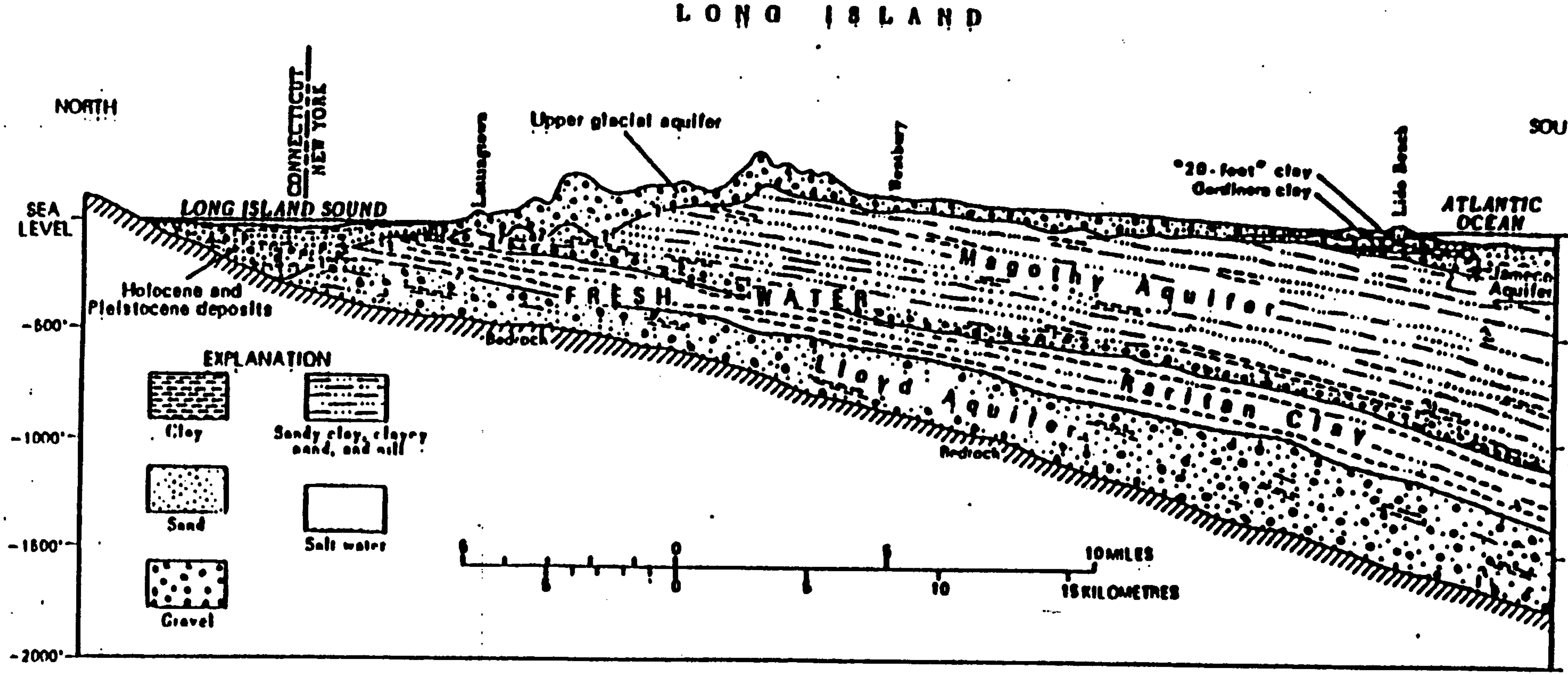
expanded during Phase II. New Hyde Park well NHP-3, however, was raised 12 feet in order to sample a higher portion of the aquifer immediately below the water table. It was felt that this well, which was contiguous and downstream of an auto wrecking yard, may have been screened too deep and missed picking up contamination.

Phase II well locations were chosen within the industrial areas where more information was needed in view of the Phase I results and potential sources. In addition, wells were placed further downgradient in an attempt to define the extent of contamination, as well as upgradient of the areas under study to obtain background information.

All wells were located on public land or municipal water supply property because of the potential legal and time constraints inherent in attempting to gain access to private property.

1.4 Regional Hydrogeologic Setting

The aquifer system underlying Nassau County (Figure 1-2) is composed of three main water bearing units: the glacial, Magothy and Lloyd formations. These aquifers are hydraulically connected throughout, and the glacial and Magothy aquifers act as recharge for underlying units. The upper glacial aquifer, although not generally used for drinking water due to widespread contamination, is important because it serves as recharge for all underlying aquifers in the central portion of the County.



Generalized section in central Nassau County showing principal aquifers and confining units (after Perlmutter and Geraghty, 1963, fig. 3).

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NASSAU COUNTY
HYDROGEOLOGIC CROSS SECTION

FIGURE NO.
1-2

Ket. Ix, 9133

present land surface, except where they are locally overlain by thin deposits of Holocene age. The deposits in Nassau County are generally highly permeable glacial outwash consisting of stratified sand and gravel and occasional thin clay beds. The saturated upper glacial aquifer is about 100 feet thick in the study area. Depth of the vadose or unsaturated zone in the County ranges from about 125 feet in the northern portion to about 20 feet along the south shore.

Water table contours and shallow groundwater flow in the study area are shown in Figure 1-3. The flow direction in the eastern Nassau County is northeast in the area north of the groundwater divide and almost due south, south of the divide. Towards the western part of the County the groundwater follows a general northwest and southwest flow pattern north and south of the groundwater divide respectively.

Groundwater flow in the Magothy aquifer (Figure 1-4) is similar to the shallower flow regime.

Groundwater in the Lloyd aquifer in eastern Nassau County flows in a northern direction, north of the groundwater divide and south of the divide in a more westward direction with less southerly components than the shallower flow regimes (Figure 1-5). In the western portion of the County, groundwater flow is in a westerly direction, both north and south of the divide.

KCT. 12, 10/33

Because this groundwater system is the only source of drinking water for Nassau County (as well as Suffolk County), it has been designated a Sole Source Aquifer by the United States Environmental Protection Agency (USEPA).

1.5 Regional Groundwater Quality

In Nassau County there are four groundwater contaminants of concern, these being nitrate, chloride, heavy metals and synthetic organic chemicals. (A fifth is iron; however, this is a naturally occurring contaminant and is not included in this discussion.)

Nitrate contamination of the glacial aquifer in Nassau County is widespread geographically and extends into the Magothy formation. Levels in many locations of the glacial aquifer, except for the extreme south shore and limited areas on the north shore, exceed the drinking water standard of 10 milligrams per liter (mg/l). Nitrate contamination of groundwater is caused primarily by onsite sewage disposal, lawn fertilizer application and past agricultural practices.

In the Magothy aquifer, elevated concentrations of nitrates are found in the central portion of the County where there is natural recharge of the Magothy from the overlying glacial aquifer, which is enhanced by heavy water supply pumpage by Magothy wells. Areas with elevated concentrations are in the

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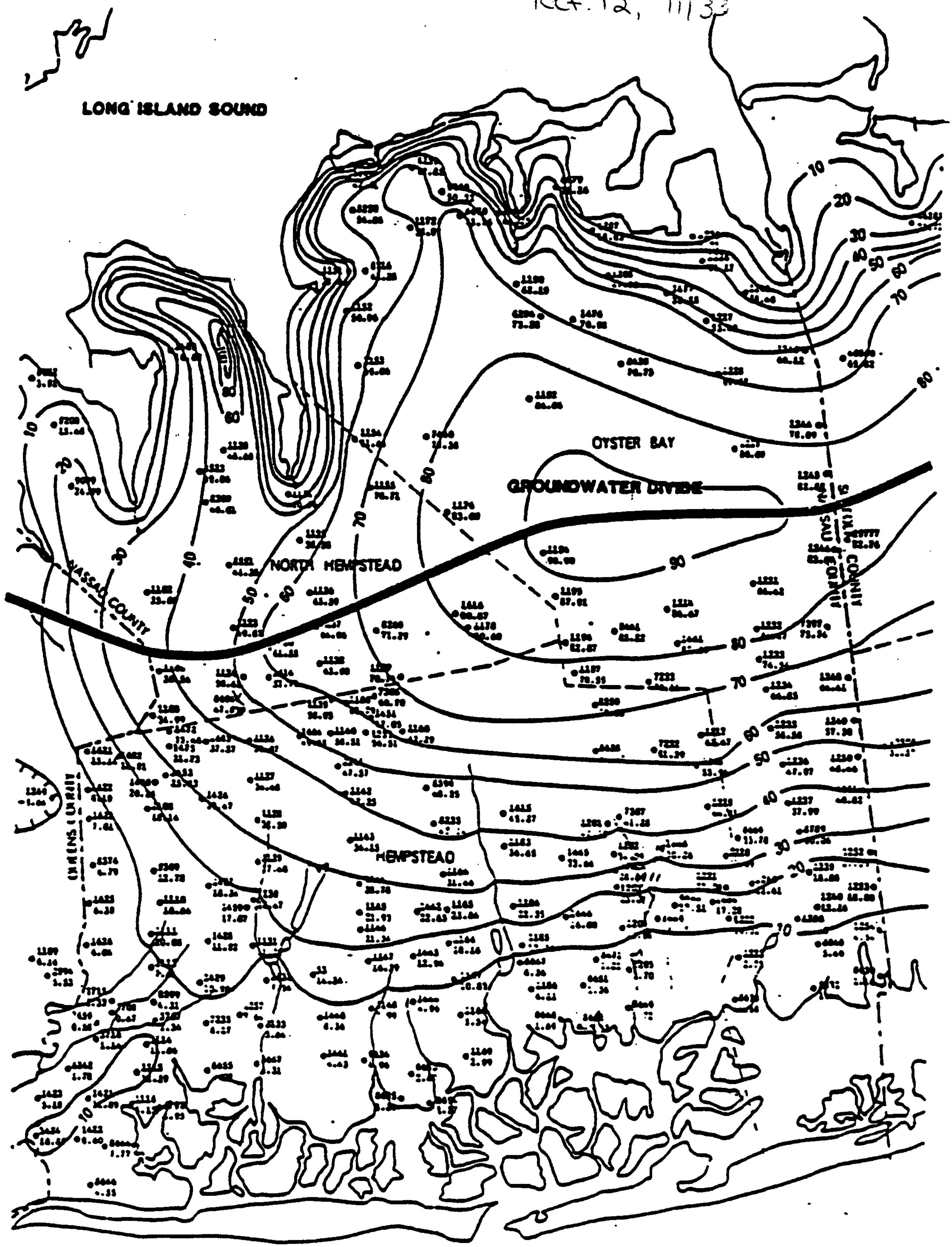
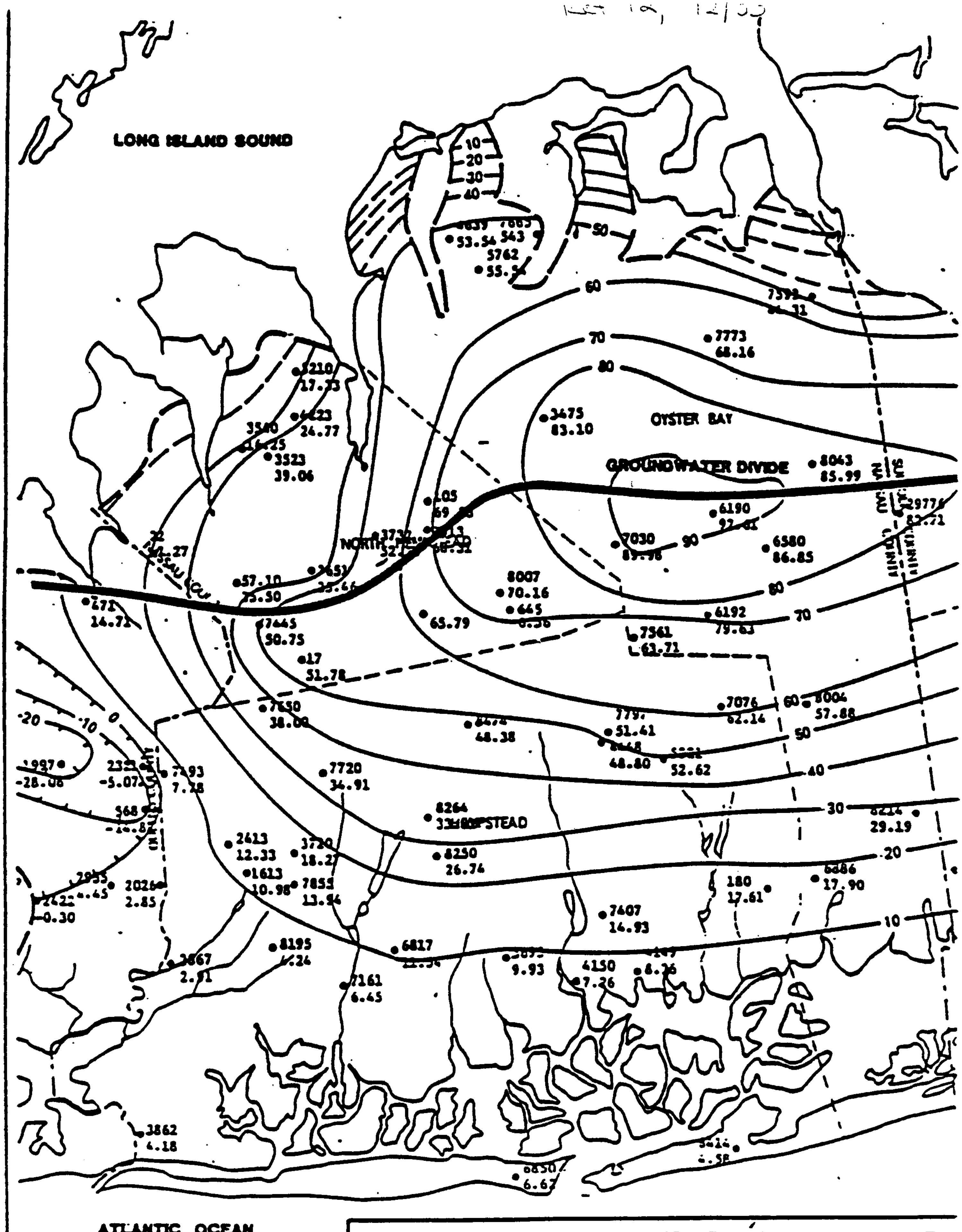


Dvirka and Bartilucci

WATER TABLE ELEVATIONS IN NASSAU COUNTY

FIGURE 1-



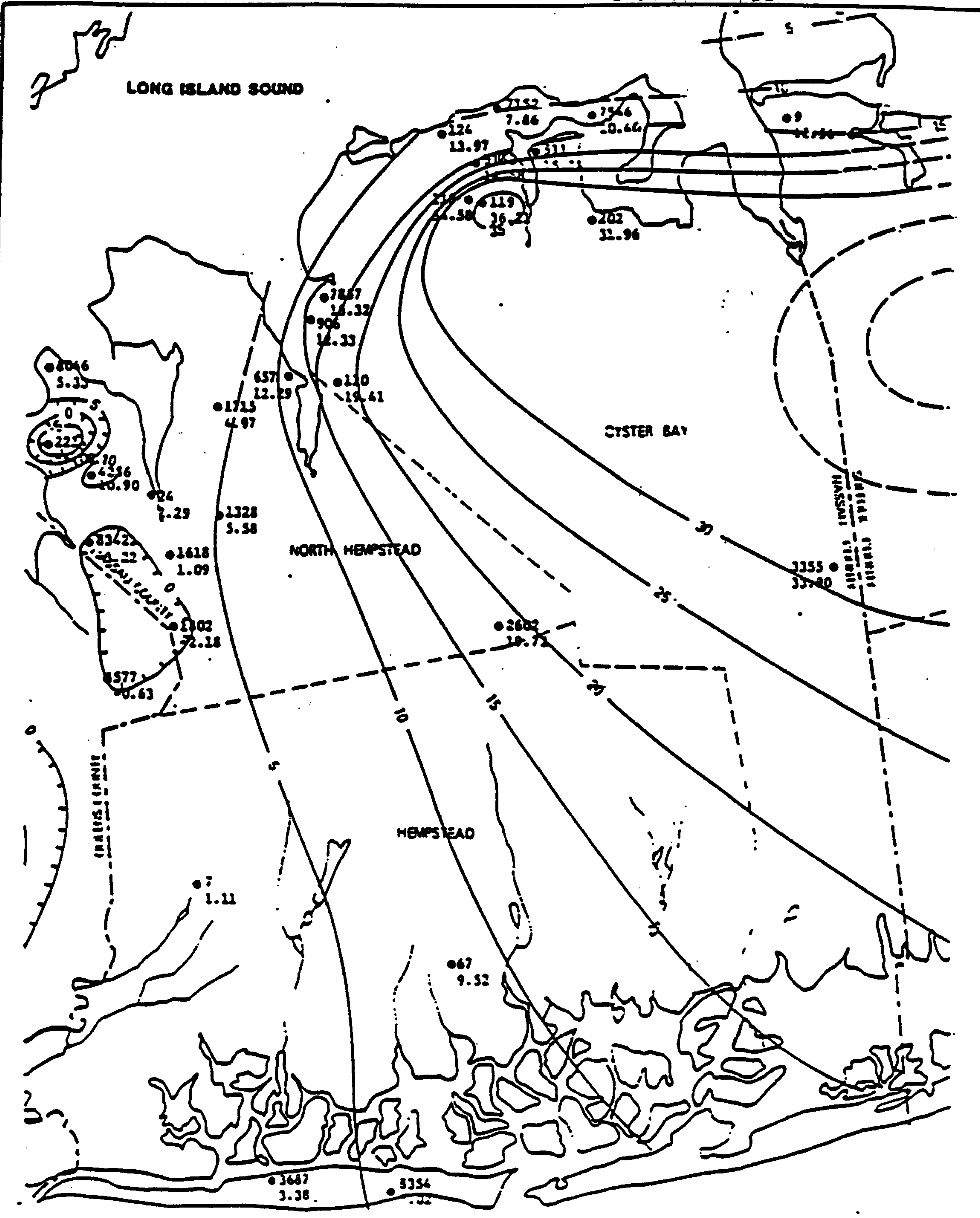
Dvirka and Bartilucci

POTENTIOMETRIC SURFACE OF THE MAGOTHY AQUIFER IN NASSAU COUN

MARCH 1979

FIGURE 1-4

Ref. 12, 13133



Dvirka and Bartilucci

POTENTIOMETRIC SURFACE OF THE LLOYD AQUIFER IN NASSAU COUNTY

JANUARY 1979

FIGURE 1-5

NCt.12, 14133

Because of the limited amount of available data, the extent of groundwater contamination cannot be assessed. However, there seems to be a definite threat to water supply wells downgradient. Jamaica water supply well N7650 exceeds NYS drinking water guidelines for organic chemicals. Both wells, N7649 and N7650 exceed USEPA proposed maximum concentration limits of 5 ug/l for trichloroethylene. Water from both of these wells is being treated by air stripping before distribution. Additional wells are needed both down and upgradient of N8026 to define the extent and source of contamination by trichloroethylene in this area.

3.5 West Hicksville

3.5.1 Site Description

The area identified as West Hicksville in this report is located east of the Wantagh Parkway, west of North Broadway, north of Stewart Avenue and south of the Northern State Parkway in the Town of Oyster Bay (Figure 3-1). Monitoring wells installed as part of this investigation are shown in Figure 3-14.

There are ten monitoring wells located in the West Hicksville area. Most of the wells are clustered centrally between Duffy Avenue and Old Country Road.

Kct. 12, 15|33

Information on the current industrial profile of West icksville indicates that the area is heavily industrialized with wide variety of industrial categories, including chemical, electronics and electrical equipment. Table 3-10 provides an dustrial profile of the area from 1977 to 1985 and estimates e annual organic chemical usage for each industry.

The residential area in West Hicksville, south of Old untry Road is considered to be of intermediate density with out approximately five to ten dwelling units per acre.

Industrial and commercial firms are concentrated generally ng West John Street and Duffy Avenue, which run east and west long central Hicksville and adjacent to Long Island Railroad.

West Hicksville is served by the Hicksville Water trict. The area is part of Nassau County Sewer District #3, d has been sewered since about 1980.

The area has been developed for about 30 years, and has ibited no recent growth. The population of Hicksville, cluding the western and northern sections, decreased from 20 in 1970 to 41,727 in 1984.

There are two landfills within the West Hicksville area on st John Street and on Duffy Avenue. The West John Street fill, owned by AGO Association (located east of Charlotte et), has been abandoned. The only remaining active landfill


N9341
N9463
WH2
WH5
N8880
WH4
WH1
WH3
WH6
N9917
WATER SUPPLY WELL
MONITORING WELL

TABLE 3-10

INDUSTRIAL PROFILE OF WEST HICKSVILLE

Source: NCHD Industrial Survey Program

Name	Location	Organic Chemicals Used	Amount Used Stored, Disposed, etc. Since 1977
Amperex Electronic Co.	230 Duffy Ave.	Benzene 1,1,1 trichloroethane	20 gals/yr 5,375 gals/yr
Four Star Association Inc.	260 Duffy Ave.	Methylene chloride	55 gals/yr
MHI Knitware Ltd.	270 Duffy Ave.	1,1,1 trichloroethane	55 gals/yr
Maganosonic Devices Inc.	290 Duffy Ave.	1,1,1 trichloroethane	660 gals/yr
Depew Mfg. Corp.	359 Duffy Ave.	Benzene Toluene	
Dyna Magnetic	200 Frank Rd.	Trichloroethylene	200 gals/yr
Model Communication	307 W. John St.	Trichloroethylene	10 gals/yr
Nestor Systems Inc.	489 W. John St.	Trichloroethylene	10 gals/yr
Universal Shallac and Supply Co.	495 W. John St.	Trichloroethylene	325 gals/yr
General Instrument Corp.	600 W. John St.	Trichloroethylene	3,600 gals/yr
Micro Contacts Inc.	62 Alpha Pl.	1,1,1 trichloroethane	1,920 gals/yr

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TABLE 3-10 (continued)

INDUSTRIAL PROFILE OF WEST HICKSVILLE

Source: NCHD Industrial Survey Program

Name	Location	Organic Chemicals Used	Amount Used Stored, Disposed, etc. Since 1977
Anchor Lithkemko	500 W. John St.	Methyl chloride 1,1,1 trichloroethane	
Metco	325 Duffy Ave.	Trichloroethylene Tetrachloroethylene Methylene chloride Trichlorotrifluoroethane	Varying quantities 50 - 400 gals/yr

Ref. 12, 19133

is located on Duffy Avenue. It is a municipal facility owned by New York State Department of Parks and Recreation and accepts agricultural waste, sweepings, rubbish and leaves.

There were several reported complaints concerning organic chemicals filed with the Nassau County Department of Health in the area of West Hicksville.

o A spill in February 1982 by Mattiace Petrochemicals involved the discharge of methyl ethyl ketone (MEK) contaminating both the surrounding soil and groundwater. In September 1982, USEPA issued an Administrative Order to have Mattiace clean up the contaminated soil and groundwater. The firm complied with the cleanup order for five months (from May to October 1984) until the project was terminated due to lack of funds. Based upon this situation and the magnitude and severity of the spill, NYSDEC is requesting that EPA consider this site as a possible Federal Superfund Site. EPA is currently pursuing an administrative lawsuit against Mattiace Petrochemical and is continuing routine monitoring of the site.

o In February 1984, Alsy Manufacturing located on Duffy Avenue was found discharging metals and volatile organic chemicals into leaching pools. NYSDEC issued an Abatement Order in April 1985 requiring that all discharges not in compliance with standards be immediately terminated and removal of all wastes from onsite leaching pools be undertaken. Cleanup of contaminated leaching pools was completed in May 1985. As of December 1985, Alsy Manufacturing had not fully complied with all requirements of the Abatement Order. The case has been referred to the State Attorney General's office for criminal prosecution and is currently under investigation by DEC and the Attorney General's office.

- A complaint against General Instrument (located at 600 West John Street) involved the contamination of soil caused by a leaking underground storage tank containing organic chemicals. General Instrument voluntarily commenced cleanup activities. By February 1984, a cleanup system had been installed and operated. Further testing by NYSDEC in August 1985 indicated inadequate operation. General Instrument was advised to alter the cleanup system which is now in the process of being completed. The case is currently under the supervision of the DEC Division of Solid and Hazardous Waste as a State Superfund site.
- Depew Manufacturing (located at 359 Duffy Avenue) was found to be discharging fiberglass containing styrene and aluminum to an open leaching lagoon. Voluntary action by Depew involved the bagging, removal and offsite disposal of the contaminated material to an approved waste disposal site.

Ref. 12, 21133

In addition to these possible contamination sources, an industrial profile in West Hicksville (1977-1985) along with estimated organic chemical usage and handling is provided in Table 3-10.

3.5.2 Geology

The wells installed as part of this groundwater investigation in the western part of Hicksville all tap the upper glacial aquifer. A hydrogeologic cross section is shown in Figure 3-15. The sediments encountered during drilling are unstratified deposits of sand and gravel. The USGS estimates the thickness of the upper glacial aquifer to be between 50 and 100 feet in this area. The lithologic log for Well N9463 (638 feet deep) describes sand, grit and gravel to 155 feet. Several clay layers are also described ranging in thickness from one to 15 feet thick.

The lithologic log for N8880 (247 feet deep) describes sand, grit and gravel for the first 62 feet. A significant clay layer exists between 70 and 98 feet below the surface. Smaller layers of clay are also described for this well, but are reported to be less than two feet thick.

The areal extent of these clay layers is unknown. They do not demonstrate clear stratigraphic continuity in wells N8880 and N9463.

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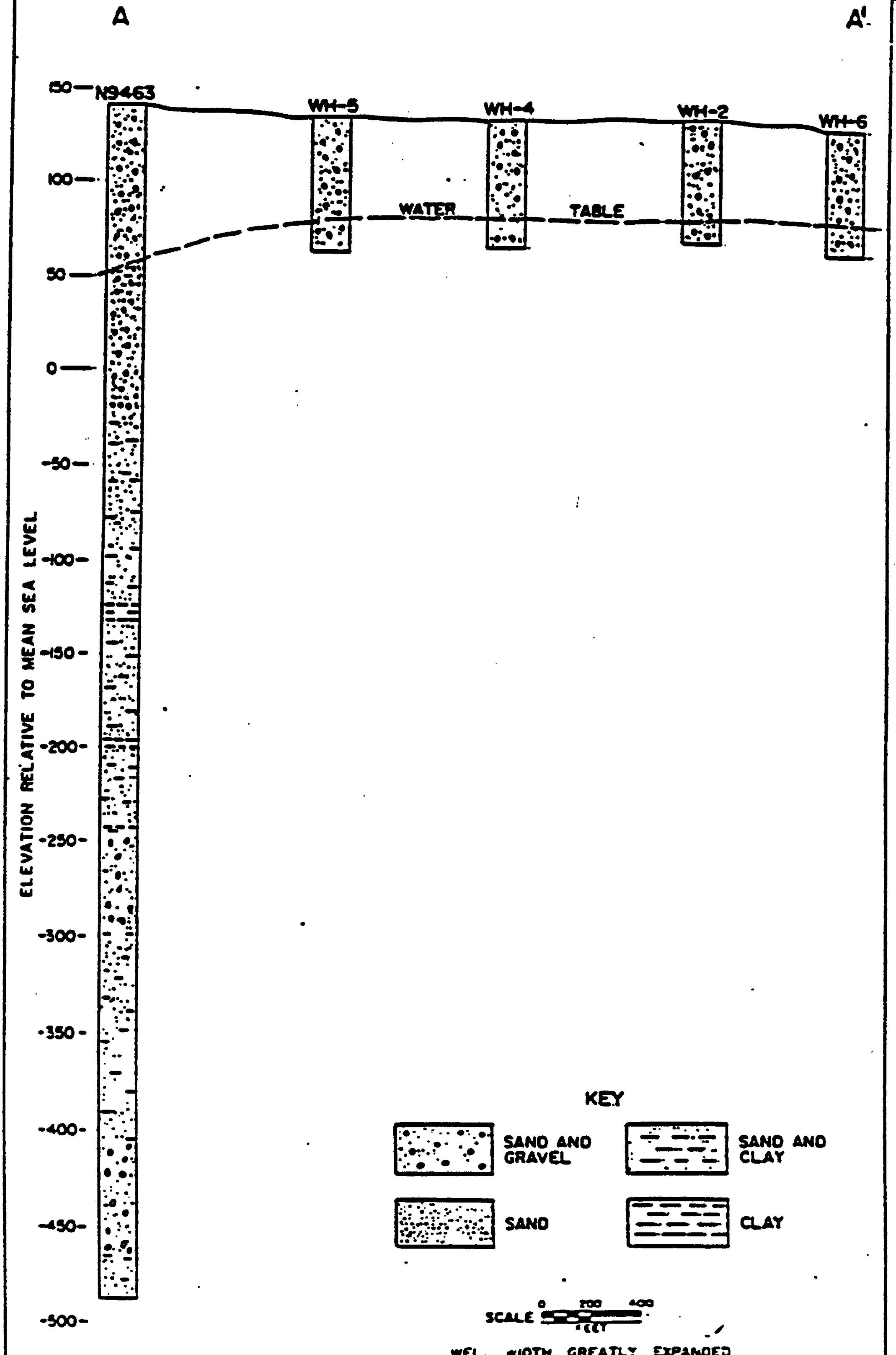

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WEST HICKSVILLE

FIGURE NO.

Rt. 12, 23133

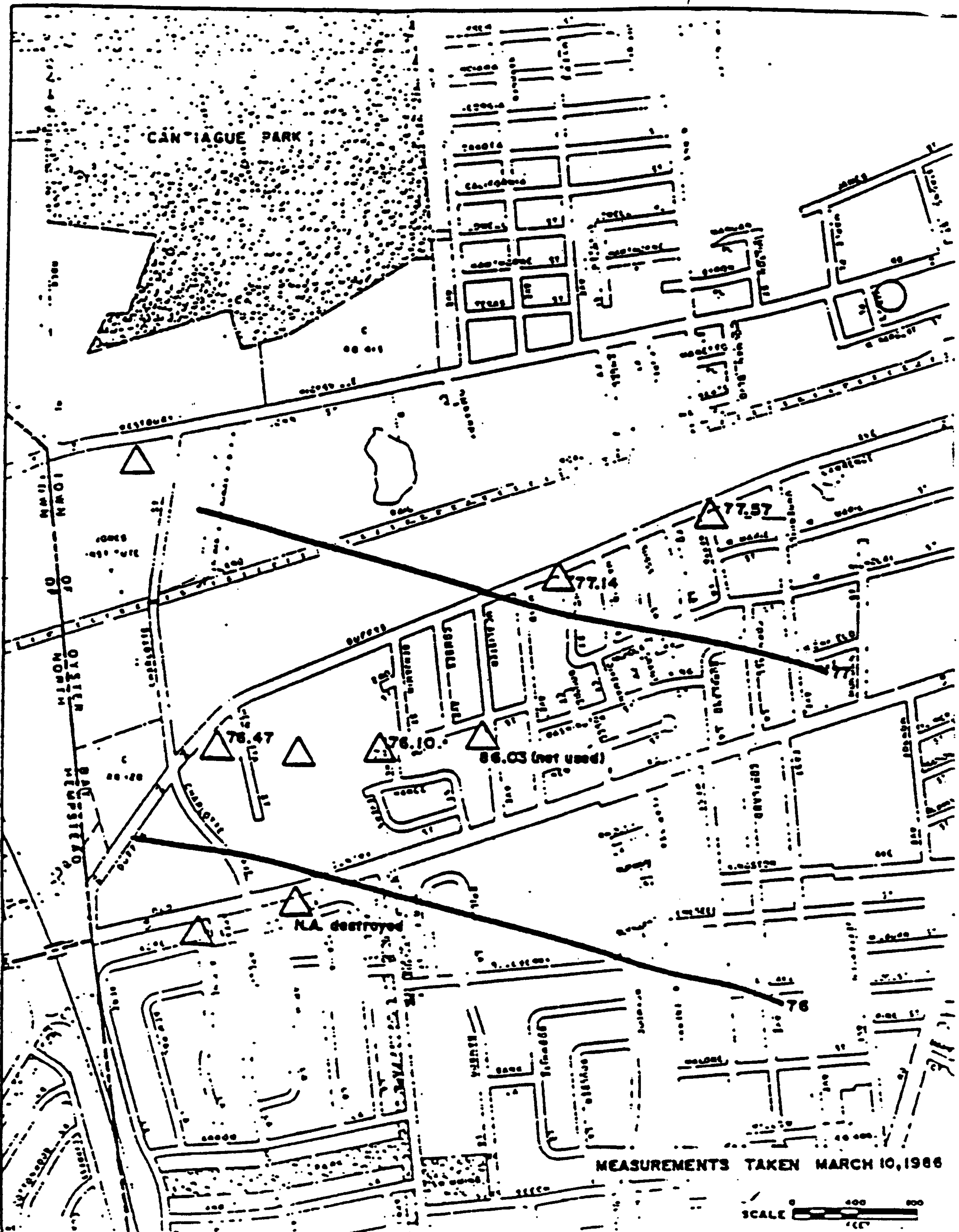

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FIGURE NO

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3.5.3 Hydrology

The regional flow pattern of the glacial aquifer in West Hicksville is towards the south and southwest. Static water level measurements from wells installed as part of this investigation generally follow this trend. One exception is WH-3 which appears to be on a local groundwater mound. Water levels in this well are reported to be ten feet above the other wells in the area in both sets of water level measurements taken from last year and this year. The cause of this groundwater mound is unknown. There is no recharge basin or reported injection well in the area or any other known reason for the high values. Because of the extremely high reported static water level, this value may be the result of a survey error and is discarded in the definition of the local flow regime. A map showing water level contours is provided in Figure 3-16. Additional data is needed at this site to more accurately determine groundwater flow.

There were no deep wells drilled in the West Hicksville area, therefore, the vertical component of groundwater is unknown. However, based on regional information, this area is part of the Magothy recharge zone.

3.5.4 Analytical Results and Findings

This preliminary contamination assessment is based upon at most three samples for each well taken between March 1984 and

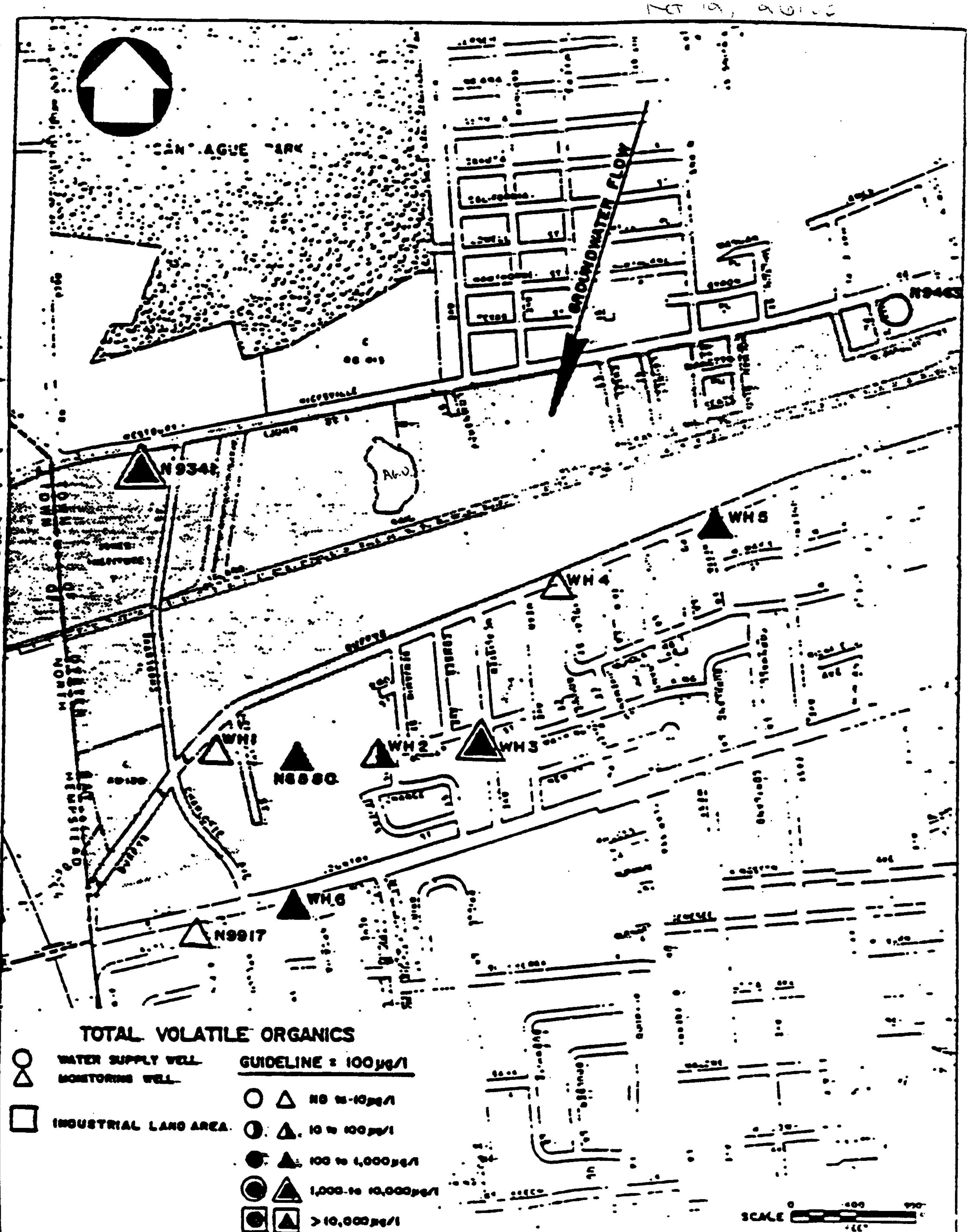
December 1985. Six wells were installed as part of this project, in addition to the four existing water supply wells and monitoring wells in the West Hicksville area. Analytical results for these wells are tabulated in Table 3-11 and a summary of water quality for total organic chemicals is provided in Table 3-12. A graphic representation of total volatile compounds is illustrated in Figure 3-17.

Analytical data for wells WH-1 and WH-4 reported almost nondetectable amounts of total volatile organic compounds. Each well had a maximum detected value of 4 ug/l for total organic compounds for three sets of samples.

Well WH-2 has a median value of 12 ug/l of 1,1,1-trichloroethane reported (the only compound detected). Wells WH-1, WH-4 and WH-3 are all below NYS Drinking Water Guidelines for organic chemicals.

Analytical results for Well WH-3 increased by an order of magnitude between sets of samples. Reported values for total organics increased from 688 ug/l to 6,844 ug/l in less than eight months. Additional data is needed for WH-3 to determine a consistent value or an increasing trend.

Analytical results for wells WH-5 and WH-6 also fluctuated between samples. Well WH-5 increased from 116 ug/l to 640 ug/l total organic compounds. Analytical results for WH-6



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WEST HICKSVILLE

FIGURE NO. 3-17

Kct. 12, 27133

TABLE 3-12

WEST HICKSVILLE - CONTAMINATED AQUIFER SEGMENTS
TOTAL ORGANIC COMPOUNDS
DATA SUMMARY
(ug/l)

West Hicksville	Depth* (Feet)	Mean	Range	Median	Number of Data Points
WH-1	60	1	0-4	0	3
WH-2	63	12	8-16		2
WH-3	64	3766	688-6844		2
WH-4	66	2	0-4	1	3
WH-5	72	378	116-640		2
WH-6	64	192	64-319	193	3
N8880	247	175			1
N9341	265	2691			1
N9463	638	0			1
N9917	73	2			1

Note: The first sample after well development was discarded in this data summary when more than one well analyses exist

* Below ground surface

TABLE 3-11

ANALYTICAL RESULTS - WEST HICKSVILLE - GROUNDWATER QUALITY

WELL NUMBER	WH-1	WH-1	WH-1	WH-1	WH-2	WH-2	WH-2	WH-3	WH-3	WH-3	WH-4	WH-4	WH-4
WELL DEPTH	60	60	60	60	68	68	68	64	64	64	66	66	66
SAMPLE DATE	10/16/84	12/5/84	4/1/85	12/10/85	12/5/84	4/1/85	12/10/85	12/5/84	4/1/85	12/10/85	10/19/84	12/5/84	4/1/85
Trichlorofluoromethane	<2	<1	<1	NA	<1	<1	NA	<1	<1	NA	<3	<1	<1
Methylene Chloride)													
1,1,2-Trichlorotrifluoroethane)--	<4	<10	<4	<8	<10	<4	<8	<10	150	320	<10	<10	<4
1,1-Dichloroethylene)													
c & t-1,2-Dichloroethylene	<10	<15	<20	<14	<15		<13	<15	<20	<14	<10	<15	<20
t-1,2-Dichloroethylene						<5							
1,1-Dichloroethane	<15	<15	NA	<14	<15	NA	<16	<15	NA	<14	<15	<15	<10
c-1,2-Dichloroethylene						<20							
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	1	1	<1	1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	4	8	14	40	460	3400	<1	2	1
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	9	64	900	<1	1	<1
Bromodichloromethane	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1
c-1,3-Dichloropropene)													
Dibromochloromethane)--		<2			<2			<2			<2	<2	
1,1,2-Trichloroethane)													
c-1,3 Dichloropropene)													
Dibromochloromethane)--	<2		<1	<1		<1	<1		<1	<1			<1
1,1,2-Trichloroethane	[illegible]		<2	<1		<2	<1		<2	<1			<2
1,2-Dibromoethane	<10	<6	<2	NA	<6	<2	NA	<6	<2	NA	<10	<6	<2
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	17	19	29	<1	<1	<1
Bromoform	<6	<3	<1	<2	<3	<1	<2	<3	<1	<2	<6	<3	<1
Benzene	<3	<3	4	<3	<3	<3	<4	<3	<3	<3	<3	<3	<3
Toluene	<3	<3	<4	<6	<3	<4	<4	<3	<4	<6	<3	<3	<4
Chlorobenzene	<3	<3	<3	<3	<3	<3	<6	<3	<3	<3	<3	<3	<3
Ethylbenzene	<3	<3	<3	<6	<3	<3	<6	<3	<3	<6	<3	<3	<3
Xylene (o,m,p)	12	<3	<3	<6	<3	<3	<12	<3	<3	<6	<3	<3	<3
Dichlorobenzene (o,m,p)	<6	<5	<4	<9	<5	<4	<10	<5	<4	<9	<6	<3	<4
Total	12	0	4	0	4	8	14	62	698	6844	0	4	1

NA-Not Analyzed   NR-No Result Due To Technical Reasons   T-No [illegible]

10.2-28133

TABLE 9-11

ANALYTICAL RESULTS - WEST HICKSVILLE - GROUNDWATER QUALITY

WELL NUMBER	WH-4	WH-5	WH-5	WH-5	WH-6	WH-6	WH-6	WH-6
WELL DEPTH	66	72	72	72	64	64	64	64
SAMPLE DATE	12/17/85	12/5/84	4/2/85	12/17/85	10/19/84	12/5/84	4/2/85	12/18/85
Trichlorofluoromethane	NA	<1	<1	NA	<5	2	1	NA
Methylene Chloride }								
1,1,2-Trichlorotrifluoroethane }	<5	<10	<4	<5	11	<10	<4	8
1,1-Dichloroethylene }								
c & t-1,2-Dichloroethylene	<10	26	<20	<10	25	28	<20	25
t-1,2-Dichloroethylene								
1,1-Dichloroethane	<14	25	NA	<14	NR	44	NA	27
c-1,2-Dichloroethylene								
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	29.	4	11	33	42	21	170
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethylene	<1	23	2	9	94	72	85	80
Bromodichloromethane	<1	<1	<1	<1	<5	<1	<1	<1
c-1,3-Dichloropropene }								
Dibromochloromethane }	.	<2			<2	<2		
1,1,2-Trichloroethane }								
c-1,3 Dichloropropene }								
Dibromochloromethane }	<1		<1	<1			<1	<1
1,1,2-Trichloroethane	<1		<2	<1			<2	<1
1,2-Dibromoethane	NA	<40	NR	NA	<10	<4	<2	NA
Tetrachloroethylene	<1	160	110	620	8	8	7	9
Bromoform	<2	<5	<1	<2	<4	<5	<1	<2
Benzene	<4	<5	<5	<4	<5	<5	<5	<4
Toluene	<4	<5	<4	<4	<5	<5	<4	<4
Chlorobenzene	<6	<5	<5	<6	<5	<5	<5	<6
Ethylbenzene	<6	<5	<5	<6	<5	<5	<5	<6
Xylene (o,m,p)	<12	<5	<5	<12	15	<5	<5	<12
Dichlorobenzene (o,m,p)	<10	<5	<4	<10	?	<5	<4	<10
Total	0	272	116	640	217	172	64	219

NA-Not Analyzed   NR-No Result Due To Technical Reasons   ?-No Mention On Lab Reports

TABLE 3-11

ANALYTICAL RESULTS
WEST HICKSVILLE - GROUNDWATER QUALITY

Well Number	N8800	N9341	N9463	N9917
Well Depth (feet)*	247	265	638	73
Sample Date	3/20/84	5/10/85	1/9/85	3/1/85
Trichlorofluoromethane	< 1	1	< 1	< 1
Methlyene Chloride 1,1,2-Trichlorotrifluoroethane 1,1-Dichloroethylene	6	21	< 6	< 7
c & t-1,2-Dichloroethylene	< 4	440	NA	< 7
t-1,2-Dichloroethylene	< 4	NA	NA	NA
1,1-Dichloroethane	< 5	66	NA	NA
c-1,2-Dichloroethylene	< 4	NA	NA	NA
Chloroform	< 1	2	< 1	< 1
1,1,1-Trichloroethane	16	16	< 1	1
Carbon Tetrachloride	1	2	< 1	< 1
Trichloroethylene	150	1600	< 1	1
Bromodichloromethane	< 1	<10	< 2	< 1
t-1,3-Dichloropropene Dibromochloromethane 1,1,2-Trichloroethane	< 1	NA	< 1	NA
c-1,3-Dichloropropene Dibromochloromethane	NA	<10	NA	< 1
1,1,2-Trichloroethane	NA	< 1	NA	< 3
1,2-Dibromoethane	< 1	<10	< 5	< 2
Tetrachloroethylene	3	260	< 2	< 1
Bromoform	< 1	1	< 2	< 1
Benzene	< 3	< 3	< 3	< 5
Toluene	< 3	< 4	<15	< 3
Chlorobenzene	< 3	< 4	<15	< 3
Ethylbenzene	< 3	57	< 4	< 3
Xylene (o,m,p)	< 3	95	< 4	< 3
Dichlorobenzene (o,m,p)	< 6	130	<20	<10
Total	175	2,691	0	0

reported 193, 64 and 319 ug/l for total volatile organics. Although wells WH-3, WH-5 and WH-6 exceed NYS Drinking Water Guidelines for organic compounds, additional data is also needed for these wells to determine consistency and trends.

In addition to the six monitoring wells installed as part of this investigation, four other wells (one water supply and three monitoring) exist in the West Hicksville study area. Analysis was based upon one sample obtained from each well and it was assumed that this information is representative. These four additional wells are N8880, N9341, N9917 and N9463. The analytical results for total organic compounds are 175, 2,691, 2 ug/l and non-detected, respectively. Well N-9463 is a water supply well (638 feet deep) in which no volatile organics were detected. The other three wells are: a Nassau County observation well (N9917) which is 73 feet deep, and two industrial wells (N8880 and N9341) which are 247 feet and 265 feet below ground surface, respectively. Based on these results, significant contamination has migrated into the Magothy aquifer up to at least 265 feet deep.

A principal contaminant in the wells is 1,1,1-trichloroethane. The largest concentration of 1,1,1-trichloroethane (5,400 ug/l) was detected in well WH-3. There are three industrial firms located less than a quarter of a mile upgradient of this well that report using significant quantities of this chemical. 1,1,1 trichloroethane may also have been used as a cesspool and drain cleaner prior to sewering.

Concentrations of 1,1,1-trichloroethane are not as high in the deeper wells. This contaminant is found up to 16 ug/l in wells 265 feet below land surface. The primary contaminant in the deeper wells is trichloroethylene.

Analytical results for well N8880 report elevated concentrations of trichloroethylene (150 ug/l), and well N9341 located about 2,000 feet north of this well reported 1,600 ug/l of this same chemical. Both wells are of similar depth (about 250 feet), which indicates that contamination has migrated into the Magothy aquifer. Because N9341 is not directly upgradient of N8880, the source of contamination is likely to originate from different sources.

Several firms in the vicinity of well N9341 are reported using up to 3,600 gallons per year of trichloroethylene. Two firms in the immediate vicinity had leaking underground storage tanks containing organic solvents and chemicals. However, because of the depth of more than 250 feet below land surface, it is more probable that the contamination source is located upgradient of the study area.

There is only one water supply well (N9463) located in the West Hicksville study area. Since most of the contaminated wells are located in the southern and western regions downgradient of the supply well, it appears that contamination of groundwater in West Hicksville does not pose a serious threat to this well.

There are, however, two wells located southwest of Hicksville in the Bowling Green Water District, which may be downgradient of a portion of the contaminated aquifer segment. These wells, N8956 and N8957, contain less than detectable limit of organic compounds at the present time. There are several clay layers described in the lithologic logs for the deeper Hicksville wells which could impede the migration of contaminants, however, the areal extent and stratigraphic continuity of the clay is unknown. Without more site specific hydrogeologic information it is assumed that the contaminated groundwater in West Hicksville could pose a serious threat to the water supply wells downgradient.

3.6 North Hicksville

3.6.1 Site Description

The North Hicksville area (Figure 3-1) is defined as the region east of North Broadway and west of South Oyster Bay Road. The northern border extends to the Northern State Parkway and the southern border extends southward towards Old Country Road. Locations of wells in this study area and land use are shown in Figure 3-18.

The major land uses are residential, commercial and industrial. The area located along the eastern border is considered to be intermediate density residential consisting of

REFERENCE 13

11046/2-91

Ket. 13, 11 L

RECORD OF TELEPHONE CONVERSATION

DATE 3-21-95

TO 8310-0076-0000-50067
NAME/FILE NO.

FROM Janis Hottinger

CLIENT/PROJECT AGO Assoc. LF.

SUBJECT Sampling event

CHARGE: DEPT. NO. ______ CLIENT SYMBOL ______ OFS NO. ______

DISCUSSION WITH Cecil Johnson, NYDEC 518-457-0747

3 piles of topsoil lying in site

Sept. 16 1987

SH87 130029-01 bottom of soil pile 1 (6"-12")
" "-02 " " 2 (6"-12")
" "-03 near 3 empty tanks (rusted) near fence on east side maybe 4K?
depth 1' deep
" "-04 Ponded area in middle of site
surface water 2" water
middle of pond 6"

"Background soil sample was not collected because no area around there has clean soil".

S.W. drains? doesn't know.

He only was on asphalt property.

within 100", houses on NW side
garage 50' from site on south side
East - L.F. - old one - probably no longer active.

He'll call me back + let me know what is file.

Edgar was there yesterday.

BY Janis Hottinger 3-21-95 ______
NAME TITLE DEPT. NO.

CC:

REFERENCE 14

Ref. 14, 1/1

INTERVIEW ACKNOWLEDGEMENT FORM

SITE NAME: A.G.O. Associates Landfill

I.D. NUMBER: 130029

PERSON CONTACTED: Cecil Johnson

DATE: July 27, 1989

PHONE NUMBER: (518) 457-0747

AFFILIATION: NYSDEC

CONTACT PERSON(S): Marie Mc Donnell

ADDRESS: Hazardous Site Control
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010

TYPE OF CONTACT: Telephone

REFERRED BY: Alex Moskie
NYSDEC, Region 1

INTERVIEW SUMMARY

Talked to Mr. Johnson about the site conditions observed at the A.G.O. Landfill during the September, 1987 soil sampling episode by NYSDEC.

He said the site appeared to be nothing more than a vacant lot. Ground surface seemed to be very clean and sandy. He has spoken to the owner onsite but could not recall the name. The owner had said that there had been no hazardous waste accepted on his property.

Four samples were taken at the site - two from ~~three~~ two piles of topsoil in the middle of the site, one from an area near three empty tanks (adjacent to the fence and LIRR) and one from a ponded area in the middle of the site.

A HNu meter was brought onsite during sampling activities. There was no response recorded above background levels.

ACKNOWLEDGEMENT:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to the YEC, Inc. interviewer (as revised below, if necessary).

Revisions (please write in any corrections needed to the above transcript)

The site is approximately 410 x 460 Square feet.

Signature: Cecil Johnson

Date: 8/1/89

REFERENCE 15

Ref. 15, 1/17

Low level of volatiles, semivolatiles
& PCB/pesticides

RECEIVED
OCT 22 1987
TECHNICAL SERVICES & RESEARCH
DIVISION OF WATER

SAMPLE DATA

SH-87-130029--01

Tentative
Unknown ket[illegible] - 52 [illegible]

Kct. 15, 2117

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER

SH-87-130029-b

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>82605
Sample Matrix: SOIL
Data Release Authorized By: [signature]

Case No: NY DEC
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/20/87
Date Analyzed: 09/20/87
Conc/Dil Factor: 1 pH: 5.4
Percent Moisture: 16

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	10.0 U
67-64-1	Acetone	4.4 JB
75-15-0	Carbon Disulfide	61.0 B
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/K (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropene	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	1.4 J
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE
f the result is a value greater than or equal to the detection limit, report the value.

U
dicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not cessarily the instrument detection limit.) The footnote should d U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

dicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data icates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit : greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identificatio has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmec by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Kat. 15, 3/17

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: N.Y. D.E.C.

SAMPLE NO.
SH-87-130029-01

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/23/87
Date Analyzed: 10/13/87
Conc/Dil Factor:-----------> 1
Percent Moisture: 16

GPC Cleanup: Yes__ No_XXX____
Seperatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	330.0 U
[illegible]-44-4	bis(-2-Chloroethyl)Ether	330.0 U
[illegible]57-8	2-Chlorophenol	330.0 U
[illegible]41-73-1	1,3-Dichlorobenzene	330.0 U
106-46-7	1,4-Dichlorobenzene	330.0 U
[illegible]-51-6	Benzyl Alcohol	330.0 U
[illegible]50-1	1,2-Dichlorobenzene	330.0 U
5-48-7	2-Methylphenol	330.0 U
[illegible]38-32-9	bis(2-chloroisopropyl)Ether	330.0 U
[illegible]-44-5	4-Methylphenol	330.0 U
21-64-7	N-Nitroso-Di-n-Propylamine	330.0 U
[illegible]2-1	Hexachloroethane	330.0 U
[illegible]5-3	Nitrobenzene	330.0 U
3-59-1	Isophorone	330.0 U
3-75-5	2-Nitrophenol	330.0 U
[illegible]67-9	2,4-Dimethylphenol	330.0 U
[illegible]5-0	Benzoic Acid	1600.0 U
1-91-1	bis(-2-Chloroethoxy)Methane	330.0 U
[illegible]83-2	2,4-Dichlorophenol	330.0 U
[illegible]82-1	1,2,4-Trichlorobenzene	330.0 U
-20-3	Naphthalene	330.0 U
6-47-8	4-Chloroaniline	330.0 U
[illegible]-3	Hexachlorobutadiene	330.0 U
-50-7	4-Chloro-3-Methylphenol	330.0 U
-57-6	2-Methylnaphthalene	330.0 U
[illegible]-4	Hexachlorocyclopentadiene	330.0 U
[illegible]-2	2,4,6-Trichlorophenol	330.0 U
-95-4	2,4,5-Trichlorophenol	1600.0 U
[illegible]-7	2-Chloronaphthalene	330.0 U
[illegible]-4	2-Nitroaniline	1600.0 U
1-11-3	Dimethyl Phthalate	330.0 U
[illegible]6-8	Acenaphthylene	330.0 U
[illegible]2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or ug/K (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	130.0 J
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Ket.15, 4117

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: NY DEC

SAMPLE NUMBER

SH 87 130029(

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 9/23/87

Date Analyzed: 10/12/87

Conc/Dil Factor: -----> 1

Percent Moisture: 16

GPC Cleanup: Yes____ No_X___

Separatory Funnel Extraction: Yes____

Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.00 U
319-85-7	Beta-BHC	8.00 U
319-86-8	Delta-BHC	8.00 U
58-89-9	Gamma-BHC (Lindane)	8.00 U
76-44-8	Heptachlor	8.00 U
309-00-2	Aldrin	8.00 U
1024-57-3	Heptachlor Epoxide	8.00 U
959-98-8	Endosulfan I	8.00 U
60-57-1	Dieldrin	8.00 U
72-55-9	4,4'-DDE	16.00 U
72-20-8	Endrin	16
33213-65-9	Endosulfan II	~~16.00 U~~
72-54-8	4,4'-DDD	16.00 U
7421-93-4	Endrin Aldehyde	16.00 U
1031-07-8	Endosulfan Sulfate	16.00 U
50-29-3	4,4'-DDT	16.00 U
53494-70-5	Endrin Ketone	49
72-43-5	Methoxychlor	~~16.00 U~~
57-74-9	Chlordane	80.00 U
8001-35-2	Toxaphene	80.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	80.00 U
11141-16-5	Aroclor-1232	80.00 U
53469-21-9	Aroclor-1242	80.00 U
12672-29-6	Aroclor-1248	80.00 U
11097-69-1	Aroclor-1254	80.00 U
11096-82-5	Aroclor-1260	160.00 U
		160.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs ________ or Ws 30 ________ Vt 20000 ________ Vi 3 ________

FORM I

Ref. 15, 5/17

RECEIVED
OCT 22 1987
TECHNICAL SERVICES & RESEARCH
DIVISION OF WATER

Small concentration of vola-tiles, semi-volatiles & pest/PCB

SAMPLE DATA

SH-87-130029-02 (AEC, soil)

Tentative - 2-pentanone, 4,4 - 41 ppm
- others

Ref. 15, 6/17

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBE

SH-87-130029-02

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>82601
Sample Matrix: SOIL
Data Release Authorized By:

Case No: NY DEC
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/20/87
Date Analyzed: 09/20/87
Conc/Dil Factor: 1 pH: 5.2
Percent Moisture: 16

er		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	10.0 U
3-9	Bromomethane	10.0 U
1-4	Vinyl Chloride	10.0 U
-00-3	Chloroethane	10.0 U
-2	Methylene Chloride	58.0 B
-1	Acetone	370.0 B
-15-0	Carbon Disulfide	5.0 U
-4	1,1-Dichloroethene	5.0 U
-3	1,1-Dichloroethane	5.0 U
-60-5	Trans-1,2-Dichloroethene	5.0 U
66-3	Chloroform	5.0 U
-2	1,2-Dichloroethane	5.0 U
3	2-Butanone	32.0
55-6	1,1,1-Trichloroethane	5.0 U
5	Carbon Tetrachloride	5.0 U
-4	Vinyl Acetate	10.0 U
7-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/ (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	11.0
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

esult is a value greater than or equal to the detection
eport the value.

compound was analyzed for but not detected. Report
detection limit for the sample with the U(e.g.10U
on necessary concentration dilution actions. (This is not
arily the instrument detection limit.) The footnote should
mpound was analyzed for but not detected.The number is
attainable detection limit for the sample.

t an estimated value.This flag is used either when
t a concentration for tentatively identified compounds
1 1 response is assumed or when the mass spectral data
the presence of a compound that meets the identification
ut the result is less than the specified detection limit
eater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identificatio has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmer by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

KT.10 , 7117

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: N.Y. D.E.C.

SAMPLE NO.
SH-87-130029-0[illegible]

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/23/87
Date Analyzed: 10/10/87
Conc/Dil Factor:------------> 1
Percent Moisture: 16

GPC Cleanup: Yes__ No_XXX____
Separatory Funnel Extraction: Yes______
Continuous Liquid - Liquid Extraction: Yes_

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	330.0 U
111-44-4	bis(-2-Chloroethyl)Ether	330.0 U
95-57-8	2-Chlorophenol	330.0 U
541-73-1	1,3-Dichlorobenzene	330.0 U
106-46-7	1,4-Dichlorobenzene	330.0 U
100-51-6	Benzyl Alcohol	330.0 U
95-50-1	1,2-Dichlorobenzene	330.0 U
95-48-7	2-Methylphenol	330.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	330.0 U
106-44-5	4-Methylphenol	330.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	330.0 U
67-72-1	Hexachloroethane	330.0 U
98-95-3	Nitrobenzene	330.0 U
78-59-1	Isophorone	330.0 U
88-75-5	2-Nitrophenol	330.0 U
105-67-9	2,4-Dimethylphenol	330.0 U
65-85-0	Benzoic Acid	1600.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	330.0 U
120-83-2	2,4-Dichlorophenol	330.0 U
120-82-1	1,2,4-Trichlorobenzene	330.0 U
91-20-3	Naphthalene	330.0 U
106-47-8	4-Chloroaniline	330.0 U
87-68-3	Hexachlorobutadiene	330.0 U
9-50-7	4-Chloro-3-Methylphenol	330.0 U
1-57-6	2-Methylnaphthalene	330.0 U
77-47-4	Hexachlorocyclopentadiene	330.0 U
88-06-2	2,4,6-Trichlorophenol	330.0 U
5-95-4	2,4,5-Trichlorophenol	1600.0 U
1-58-7	2-Chloronaphthalene	330.0 U
88-74-4	2-Nitroaniline	1600.0 U
1-11-3	Dimethyl Phthalate	330.0 U
8-96-8	Acenaphthylene	330.0 U
99-09-2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	130.0 J
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

FORM I

Ret. 15, 8/17

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.
CASE NO: NY DEC

SAMPLE NUMBER

SH 87 130023 02

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 9/23/87
Date Analyzed: 10/12/87
Conc/Dil Factor: -----> 1
Percent Moisture: 16

GPC Cleanup: Yes____ No_X___
Separatory Funnel Extraction: Yes____
Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.00 U
319-85-7	Beta-BHC	8.00 U
319-86-8	Delta-BHC	8.00 U
58-89-9	Gamma-BHC (Lindane)	8.00 U
76-44-8	Heptachlor	8.00 U
309-00-2	Aldrin	8.00 U
1024-57-3	Heptachlor Epoxide	8.00 U
959-98-8	Endosulfan I	8.4
60-57-1	Dieldrin	8.00 U
72-55-9	4,4'-DDE	16.00 U
72-20-8	Endrin	7.8 J
33213-65-9	Endosulfan II	16.00 U
72-54-8	4,4'-DDD	16.00 U
7421-93-4	Endrin Aldehyde	16.00 U
1031-07-8	Endosulfan Sulfate	16.00 U
50-29-3	4,4'-DDT	16.00 U
53494-70-5	Endrin Ketone	15 J
72-43-5	Methoxychlor	16.00 U
57-74-9	Chlordane	80.00 U
8001-35-2	Toxaphene	80.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	80.00 U
11141-16-5	Aroclor-1232	80.00 U
53469-21-9	Aroclor-1242	80.00 U
12672-29-6	Aroclor-1248	80.00 U
11097-69-1	Aroclor-1254	80.00 U
11096-82-5	Aroclor-1260	160.00 U
		160.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs ________ or Ws 30 ________ Vt 20000 ________ Vi 3 ________

FORM I

Nct.10, 9117

Low Concentr. of volatiles, PCB/pest.

SAMPLE DATA

SH-87-130029-03. (A60 -soil

Tentative — 2-pentanone — — ppm
+ others

Ref. 15, 10/17

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER

SH-87-130029-0_

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >82602
Sample Matrix: SOIL
Data Release Authorized By:

Case No: NY DEC
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/17/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/20/87
Date Analyzed: 09/20/87
Conc/Dil Factor: 1
Percent Moisture: 08.
pH: 4.9

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	23.0 B
67-64-1	Acetone	120.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	1.4 J
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U
Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U) based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J
Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

Kct. 15, 11/17

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: N.Y. D.E.C.

SAMPLE NO.
SN-87-130029 a

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/23/87
Date Analyzed: 10/10/87
Conc/Dil Factor:------------> 1
Percent Moisture: 8

GPC Cleanup: Yes__ No_XXX____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	
111-44-4	bis(-2-Chloroethyl)Ether	330.0 U
95-57-8	2-Chlorophenol	330.0 U
541-73-1	1,3-Dichlorobenzene	330.0 U
106-46-7	1,4-Dichlorobenzene	330.0 U
100-51-6	Benzyl Alcohol	330.0 U
95-50-1	1,2-Dichlorobenzene	330.0 U
95-48-7	2-Methylphenol	330.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	330.0 U
106-44-5	4-Methylphenol	330.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	330.0 U
67-72-1	Hexachloroethane	330.0 U
98-95-3	Nitrobenzene	330.0 U
78-59-1	Isophorone	330.0 U
88-75-5	2-Nitrophenol	330.0 U
105-67-9	2,4-Dimethylphenol	330.0 U
65-85-0	Benzoic Acid	330.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	1600.0 U
120-83-2	2,4-Dichlorophenol	330.0 U
120-82-1	1,2,4-Trichlorobenzene	330.0 U
91-20-3	Naphthalene	330.0 U
106-47-8	4-Chloroaniline	330.0 U
87-68-3	Hexachlorobutadiene	330.0 U
59-50-7	4-Chloro-3-Methylphenol	330.0 U
91-57-6	2-Methylnaphthalene	330.0 U
77-47-4	Hexachlorocyclopentadiene	330.0 U
88-06-2	2,4,6-Trichlorophenol	330.0 U
95-95-4	2,4,5-Trichlorophenol	330.0 U
91-58-7	2-Chloronaphthalene	1600.0 U
88-74-4	2-Nitroaniline	330.0 U
131-11-3	Dimethyl Phthalate	1600.0 U
208-96-8	Acenaphthylene	330.0 U
99-09-2	3-Nitroaniline	330.0 U
		1600.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	130.0 J
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Ref. 15, 12/17

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.

CASE NO: NY DEC

SAMPLE NUMBER

SH 87 130029

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 9/23/87

Date Analyzed: 10/12/87

Conc/Dil Factor: -----> 1

Percent Moisture: 8

GPC Cleanup: Yes____ No X___

Separatory Funnel Extraction: Yes____

Continuous Liquid-Liquid Extraction: Yes____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.00 U
319-85-7	Beta-BHC	8.00 U
319-86-8	Delta-BHC	8.00 U
58-89-9	Gamma-BHC (Lindane)	8.00 U
76-44-8	Heptachlor	8.00 U
309-00-2	Aldrin	8.00 U
1024-57-3	Heptachlor Epoxide	8.00 U
959-98-8	Endosulfan I	8.00 U
60-57-1	Dieldrin	16.00 U
72-55-9	4,4'-DDE	110
72-20-8	Endrin	16.00 U
33213-65-9	Endosulfan II	16.00 U
72-54-8	4,4'-DDD	85
7421-93-4	Endrin Aldehyde	16.00 U
1031-07-8	Endosulfan Sulfate	16.00 U
50-29-3	4,4'-DDT	430
53494-70-5	Endrin Ketone	16.00 U
72-43-5	Methoxychlor	80.00 U
57-74-9	Chlordane	80.00 U
8001-35-2	Toxaphene	160.00 U
12674-11-2	Aroclor-1016	80.00 U
11104-28-2	Aroclor-1221	80.00 U
11141-16-5	Aroclor-1232	80.00 U
53469-21-9	Aroclor-1242	80.00 U
12672-29-6	Aroclor-1248	80.00 U
11097-69-1	Aroclor-1254	160.00 U
11096-82-5	Aroclor-1260	160.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs ________ or Ws 30 ________ Vt 20000 ________ Vi 3 ________

FORM I

Ref. 15, 13|17

RECEIVED
OCT 22 1987
TECHNICAL SERVICES & RESEARCH
DIVISION OF WATER

Low concentration of volatiles semivolatiles of Pest

SAMPLE DATA

SH-87-130029-04 - AGO -

Tentative: 2-pentanone-4-hydroxy-4-methyl -360 ppm
- [illegible]

Ref. 15, 14117

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NU---

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>82607
Sample Matrix: SOIL
Data Release Authorized By: [signature]

Case No: NY DEC
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/17/87

SH-87-130029-4

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/20/87
Date Analyzed: 09/20/87
Conc/Dil Factor: 1 pH: 4.1
Percent Moisture: 16

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	3.8 JB
67-64-1	Acetone	10.0 U
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
07-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
6-23-5	Carbon Tetrachloride	5.0 U
08-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	2.0 J
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

I the result is a value greater than or equal to the detection limit, report the value.

U

In cates compound was analyzed for but not detected. Report th minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should e U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

nd cates an estimated value.This flag is used either when s ating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data nd ates the presence of a compound that meets the identification ri ria but the result is less than the specified detection limit t greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identificati has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confir by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

Ket.15, 15/17

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: N.Y. D.E.C.

SAMPLE NO.
SH-87-130029-04

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/23/87
Date Analyzed: 10/10/87
Conc/Dil Factor:------------> 1
Percent Moisture: 16

GPC Cleanup: Yes__ No_XXX____
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes_

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	330.0 U
111-44-4	bis(-2-Chloroethyl)Ether	330.0 U
95-57-8	2-Chlorophenol	330.0 U
541-73-1	1,3-Dichlorobenzene	330.0 U
106-46-7	1,4-Dichlorobenzene	330.0 U
100-51-6	Benzyl Alcohol	330.0 U
95-50-1	1,2-Dichlorobenzene	330.0 U
95-48-7	2-Methylphenol	330.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	330.0 U
106-44-5	4-Methylphenol	330.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	330.0 U
67-72-1	Hexachloroethane	330.0 U
98-95-3	Nitrobenzene	330.0 U
78-59-1	Isophorone	330.0 U
88-75-5	2-Nitrophenol	330.0 U
105-67-9	2,4-Dimethylphenol	330.0 U
65-85-0	Benzoic Acid	1600.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	330.0 U
120-83-2	2,4-Dichlorophenol	330.0 U
120-82-1	1,2,4-Trichlorobenzene	330.0 U
91-20-3	Naphthalene	330.0 U
106-47-8	4-Chloroaniline	330.0 U
7-68-3	Hexachlorobutadiene	330.0 U
59-50-7	4-Chloro-3-Methylphenol	330.0 U
91-57-6	2-Methylnaphthalene	330.0 U
7-47-4	Hexachlorocyclopentadiene	330.0 U
8-06-2	2,4,6-Trichlorophenol	330.0 U
95-95-4	2,4,5-Trichlorophenol	1600.0 U
1-58-7	2-Chloronaphthalene	330.0 U
3-74-4	2-Nitroaniline	1600.0 U
131-11-3	Dimethyl Phthalate	330.0 U
08-96-8	Acenaphthylene	330.0 U
-09-2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	200.0 J
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	520.0
129-00-0	Pyrene	480.0
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	190.0 J
207-08-9	Benzo(k)Fluoranthene	210.0 J
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Ref. 15, 16117

ORGANICS ANALYSIS DATA SHEET

(PAGE 3)

LABORATORY NAME: NANCO LABS, INC.
CASE NO: NY DEC

SAMPLE NUMBER

SH 87 130029-04

PESTICIDE/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 9/23/87
Date Analyzed: 10/12/87
Conc/Dil Factor: -----> 1
Percent Moisture: 16

GPC Cleanup: Yes___ No X___
Separatory Funnel Extraction: Yes___
Continuous Liquid-Liquid Extraction: Yes___

CAS. Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	8.00 U
319-85-7	Beta-BHC	8.00 U
319-86-8	Delta-BHC	8.00 U
58-89-9	Gamma-BHC (Lindane)	8.00 U
76-44-8	Heptachlor	8.00 U
309-00-2	Aldrin	8.00 U
1024-57-3	Heptachlor Epoxide	8.00 U
959-98-8	Endosulfan I	8.00 U
60-57-1	Dieldrin	8.00 U
72-55-9	4,4'-DDE	16.00 U
72-20-8	Endrin	16
33213-65-9	Endosulfan II	16.00 U
72-54-8	4,4'-DDD	16.00 U
7421-93-4	Endrin Aldehyde	18
1031-07-8	Endosulfan Sulfate	16.00 U
50-29-3	4,4'-DDT	16.00 U
53494-70-5	Endrin Ketone	21
72-43-5	Methoxychlor	16.00 U
57-74-9	Chlordane	80.00 U
8001-35-2	Toxaphene	80.00 U
12674-11-2	Aroclor-1016	160.00 U
11104-28-2	Aroclor-1221	80.00 U
11141-16-5	Aroclor-1232	80.00 U
53469-21-9	Aroclor-1242	80.00 U
12672-29-6	Aroclor-1248	80.00 U
11097-69-1	Aroclor-1254	80.00 U
11096-82-5	Aroclor-1260	160.00 U
		160.00 U

Vi = Volume of extract injected (ul)

Vs = Volume of water extracted (ml)

Ws = Weight of sample extracted (g)

Vt = Volume of total extract (ul)

Vs ________ or Ws 30. ________ Vt 20000 ________ Vi 3 ________

FORM I

NYSDEC - DSHW - CHAIN OF CUSTODY RECORD

Name	Site Location	Sample Prefix #
? G. O. Asse	Jericho	130029

Released By (Signature) Date/Time: 9/11/87 12:15

Received by (Signature) Date/Time: 9/11/87 Johnson 12:15

Type			ORG soil	Metals soil		
Volume			1/2 pt	1/2 pt		
Material			Glass	Glass		
Lot #			NA	NA		
Total			2	2		

Relinquished by (Sig) Date/Time	Received Sig.	Date/Time	Relinquished by	Date/Time	Received by	Date/Time
Johnson 9/17/87 (Signature)						

#	Date	Time	Comp	Grab	Sample Location	Matrix	Total # of Bottles	40 ml VOA	1 liter	250 ml metals water	1 pt. jar soil		Mobile Lab Accession #
1	9/11	3:20 pm		✓	In the middle of site - near top soil	Soil	1				1		
130029-11	9/11	3:30		✓	Near the bottom of the second top soil pile.	Soil	1				1		
-03	11	3:40		✓	Near the three empty drums	Soil	1				1		
-04	11	3:48		✓	In the middle of site in catchment area		1				1		

Relinquished by	Date/Time	Received by	Date/Time	Relinquished by	Date/Time	Received by	Date/Time

Relinquished by	Date/Time	Received by	Date/Time	Relinquished by	Date/Time	Received for Lab by	Date/Time
						J. Coleman	9/17 2:30 pm

4-15-1141

REFERENCE 16

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/28/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 1 of 2
Logged By Eric Arnesen
Well No. MW-1
Location Hicksville, New York
M.P. Elevation 74.11 ft.
Drilling Started 2/28/91 Ended 3/1/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 60
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 58.70
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	48.90'	
3/11/91	48.81'	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Used Waterra pump for 20 minutes at 5 gpm removed ~100 gallons 49 NTU

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
	1		0-5 from cuttings		FILL	0	Fill material and asphalt.
	2	1.0	5-7	4, 6, 8, 14		5	All dark brown medium SAND, gravel and fill.
0	3	0.3	10-12	10, 10, 15, 22	SAND	10	All orange medium coarse SAND and fill.
0	4	0.8	15-17	Not Recorded		15	All orange medium coarse SAND and fill.
	5	1.3	20-22	2, 4, 4, 14		20	All coarse to medium SAND with gravel.
0	6	1.4	25-27	4, 10, 21, 27		25	All coarse orange SAND trace gravel.
0	7	1.0	30-32	4, 10, 12, 22		30	Top 0.6': coarse orange SAND and gravel. Middle 0.2': Medium orange SAND. Bottom 0.2': Coarse orange SAND and gravel.
	8	1.0	35-37	4, 6, 14, 21		35	All orange coarse SAND and gravel.

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Kb 16, 2/18

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/28/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-1
Location Hicksville, New York
M.P. Elevation 74.11 ft.
Drilling Started 2/28/91 Ended 3/1/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 60
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 58.70
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	48.90'	
3/11/91	48.81'	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Used Waterra pump for 20 minutes at 5 gpm removed ~100 gallons 49 NTU

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	9	1.3	40-42	4, 7, 12, 20		40	All orange coarse SAND and gravel.
0	10	1.0	45-47	4, 9, 14, 21		45	All orange medium SAND.
0	11	1.0	50-52	4, 4, 14, 20		50	All orange medium SAND, tan and damp.
	12	1.4	55-57	Not Recorded		55	All brown coarse SAND with gravel in the tip; Wet. Water table ~51.5.
						60	
						65	
						70	
						75	

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

ROUX

Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG

-.45 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING
2 INCH DIAMETER,

☐ BACKFILL
☒ GROUT cement/bentonite

42 FT.

BENTONITE ☐ SLURRY ☒ PELLETS

44 FT.

48.70 FT.

WELL SCREEN
2 INCH DIAMETER,
PVC .010 SLOT

#1 GRAVEL PACK

58.70 FT.

60 FT.

NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y

WELL NO. MW-1 PERMIT NO. ______

TOWN/CITY Hicksville

COUNTY Nassau STATE New York

LAND-SURFACE ELEVATION
AND DATUM 74.56 FEET ☒ SURVEYED
Arbitrary ☐ ESTIMATED

INSTALLATION DATE(S) 02/28/91, 03/01/91

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR Marine Pollution Control

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS

WATER REMOVED DURING DEVELOPMENT 100 GALLONS

STATIC DEPTH TO WATER 48.90 FEET BELOW M.P.

PUMPING DEPTH TO WATER N/A FEET BELOW M.P.

PUMPING DURATION 33 HOURS

YIELD N/D GPM 5 DATE 03/11/91

SPECIFIC CAPACITY N/D GPM/FT.

WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable.

HYDROGEOLOGIST Eric Arnesen

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/25/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 1 of 2
Logged By Eric Arnesen
Well No. MW-2
Location Hicksville, New York
M.P. Elevation 82.84 ft.
Drilling Started 02/25/91 Ended 02/25/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 70
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 66.25
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	60.41	
3/11/91	60.23	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 32 minutes at 5 gal/min ~160 gallons removed 50 NTU

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	1		0-2	cuttings	FILL	0	Fill type material.
0	2	0.9	5-7	45 total	SAND	5	All brown coarse SAND and gravel with cobbles.
0	3	0.8	10-12	8, 20, 3, 3		10	All brown coarse SAND and gravel with cobbles.
0	4	0.9	15-17	10, 7, 10, 26		15	Brown and orange coarse SAND and gravel with cobbles.
0	5	1.0	20-22	6, 10, 9, 9		20	Brown and orange coarse SAND and gravel with cobbles.
0	6	1.0	25-27	4, 12, 9, 3		25	Brown and orange coarse SAND and gravel with cobbles.
0	7	1.0	30-32	9, 16, 10, 10		30	Brown and orange coarse SAND and gravel with cobbles.
	8	1.0	35-37	9, 8, 8, 5		35	Brown and orange coarse SAND and gravel with cobbles.

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 5116

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/25/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-2
Location Hicksville, New York
M.P. Elevation 82.84 ft.
Drilling Started 02/25/91 Ended 02/25/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 70
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 68.49
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	60.41	
3/11/91	60.23	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 32 minutes at 5 gal/min ~160 gallons removed 50 NTU

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	9	1.2	40-42	5, 11, 12, 5		40	Brown and orange coarse SAND and gravel with cobbles.
0	10	0.7	45-47	9, 24, 16, 7		45	All brown coarse SAND with gravel.
0	11	1.3	50-52	7, 7, 25, 33		50	All tan medium SAND trace gravel.
	12	1.4	55-57	5, 4, 30, 25		55	Top 0.3': Coarse SAND trace gravel. 0.6': Very coarse orange SAND and gravel. Bottom 0.7': Medium tan SAND DTW ~58'.
	13	1.3	60-62	11, 23, 13, 10		60	Top 0.7': Medium brown SAND. Bottom 0.6': Coarse SAND and gravel, wet.
0	14	1.3	65-67	3, 6, 6, 11		65	Top 0.4': Coarse brown SAND and gravel. Bottom 0.9': Brown medium SAND trace gravel, wet.
						70	
						75	

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 6118

ROUX
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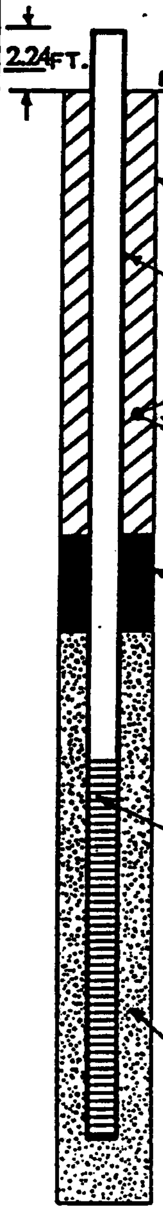
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



2.24 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING 2 INCH DIAMETER,

☐ BACKFILL
☒ GROUT cement/bentonite

51 FT.

BENTONITE ☐ SLURRY ☐ PELLETS

53 FT.

56.25 FT.

WELL SCREEN 2 INCH DIAMETER, PVC .010 SLOT

#1 GRAVEL PACK

66.25 FT.

70 FT.

NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y

WELL NO. MW-2 PERMIT NO.

TOWN/CITY Hicksville

COUNTY Nassau STATE New York

LAND-SURFACE ELEVATION AND DATUM 80.6 FEET ☒ SURVEYED
Arbitrary ☐ ESTIMATED

INSTALLATION DATE(S) 02/25/91, 02/26/91

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR Marine Pollution Control

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS

WATER REMOVED DURING DEVELOPMENT 160 GALLONS

STATIC DEPTH TO WATER 60.41 FEET BELOW M.P.

PUMPING DEPTH TO WATER N/D FEET BELOW M.P.

PUMPING DURATION ~5 HOURS

YIELD N/D GPM 5 DATE

SPECIFIC CAPACITY N/D GPM/FT.

WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable

HYDROGEOLOGIST Eric Arnesen

MW 16, 7/15

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/27/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 1 of 2
Logged By Eric Arnesen
Well No. MW-3
Location Hicksville, New York
M.P. Elevation 82.83
Drilling Started 02/27/91 Ended 02/27/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 70
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 67.49
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	60.09'	
3/11/91	59.08'	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 30 minutes at 5 GPM, removed 150 gallons 45 NTU.

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	1		cutting first 5 feet		FILL	0	Fill material.
0	2	1.0	5-7	9, 10, 15, 18		5	All coarse brown SAND and gravel, fill material.
0	3	0.4	10-12	3, 4, 7, 10	SAND and GRAVEL	10	All coarse white SAND and gravel.
0	4	0.5	15-17	8, 9, 12, 24		15	All coarse white SAND and gravel with large cobbles.
	5	0.9	20-22	4, 8, 16, 30		20	Tan coarse SAND with gravel.
0	6	1.1	25-27	3, 6, 11, 19		25	All brown coarse SAND with gravel.
0	7	NR	30-32	Not Recorded		30	No recovery.
	8	1.0	35-37	Not Recorded		35	All orange coarse SAND and gravel.

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 8/18

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/27/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-3
Location Hicksville, New York
M.P. Elevation 82.83 ft.
Drilling Started 02/27/91 Ended 02/27/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 70
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 67.49
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	60.09'	
3/11/91	59.08'	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 30 minutes at 5 GPM, removed 150 gallons 45 NTU.

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
		0.8	40-42	7, 7, 12, 19		40	All orange coarse SAND and gravel.
	10	NR	45-47	7, 9, 12, 20		45	No recovery.
0	11	0.7	50-52	7, 9, 12, 20		50	All orange coarse SAND and gravel.
	12	1.3	55-57	4, 9, 20, 24	SAND	55	Top 0.2': All orange coarse SAND and gravel. Bottom 1.1': White to tan medium SAND.
	13	1.3	60-62	Not Recorded		60	Top 0.5': Grey to brown medium SAND. Middle 0.3': Grey to brown medium SAND, trace cobbles. Bottom 0.5': Coarse tan SAND trace gravel.
0	14		65-67	3, 3, 5, 5		65	All greyish medium SAND trace gravel, wet. ~58.50 DTW.
0	15	1.3	70-72	Not Recorded	SAND and GRAVEL	70	All coarse orange SAND and gravel.
						75	

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

ROUX
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ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG

2.53 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING
2 INCH DIAMETER,

☐ BACKFILL
☒ GROUT cement/bentonite

51 FT.

BENTONITE ☐ SLURRY ☒ PELLETS

53 FT.

57.46 FT.

WELL SCREEN
2 INCH DIAMETER,
PVC .010 SLOT

#1 GRAVEL PACK

67.49 FT.

70 FT.

NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y
WELL NO. MW-3 PERMIT NO. ______
TOWN/CITY Hicksville
COUNTY Nassau STATE New York
LAND-SURFACE ELEVATION
AND DATUM 80.30 FEET ☒ SURVEYED
Arbitrary ☐ ESTIMATED
INSTALLATION DATE(S) 02/27/91, 02/28/91
DRILLING METHOD Hollow Stem Auger
DRILLING CONTRACTOR Marine Pollution Control
DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS
WATER REMOVED DURING DEVELOPMENT ~150 GALLONS
STATIC DEPTH TO WATER 60.09 FEET BELOW M.P.
PUMPING DEPTH TO WATER N/A FEET BELOW M.P.
PUMPING DURATION 5 HOURS
YIELD N/D GPM 5 DATE 03/11/91
SPECIFIC CAPACITY N/D GPM/FT.
WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable.

HYDROGEOLOGIST Eric Arnesen

(4/10, 10/15)

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date

Project A.G.O. Associates

Client Gibbs & Hill, Inc.

Page 1 of 2

Logged By Eric Arnesen

Well No. MW-4

Location Hicksville, New York

M.P. Elevation 73.66 ft.

Drilling Started 3/5/91 Ended 3/5/91

Driller Marine Pollution Control

Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10

Final Depth (ft.) 60

Casing Diam. (in.) 2

Casing Length (ft.) 10

Screen Setting (ft.) 59.45

Screen Slot & Type .010 PVC

Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	50.76'	
3/11/91	50.73'	

SAMPLER

Type Split Spoon

Hammer 140 lb.

Fall 30 in.

DEVELOPMENT

Waterra pump for 60 minutes at 5 gpm ~300 gallons removed 41 NTU's.

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	1		0-2	cuttings	FILL	0	Surface material and organic matter.
0	2	0.8	5-7	4, 6, 13, 21	SAND and GRAVEL	5	All coarse tan SAND with gravel, very loose, non-plastic.
0	3	1.0	10-12	6, 14, 12, 17		10	Top 0.2': All gravel Bottom 0.8': Coarse tan SAND trace gravel all loose, non-plastic.
0	4	1.2	15-17	4, 10, 11, 15		15	All brown coarse SAND and gravel, non-plastic, loose.
0	5	0.4	20-22	6, 10, 13, 14		20	All orangish coarse SAND, trace gravel, loose, non-plastic.
0	6	1.0	25-27	4, 10, 13, 32		25	All coarse orange SAND trace gravel, loose, non-plastic.
0	7	NR	30-32	4, 10, 15, 19		30	Large cobble in end.
	8	1.4	35-37	3, 5, 12, 12		35	All coarse brown SAND with trace gravel.

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 11/18

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-4
Location Hicksville, New York
M.P. Elevation 73.66 ft.
Drilling Started 3/5/91 Ended 3/5/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 60
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 59.45
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	50.76'	
3/11/91	50.73'	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 60 minutes at 5 gpm ~300 gallons removed 41 NTU's.

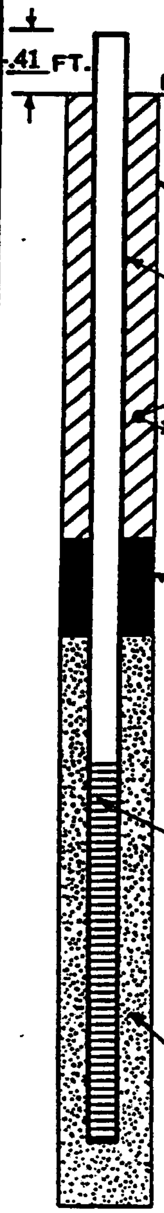
PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
	9	1.7	40-42	3, 6, 11, 18		40	All white and orange coarse SAND and trace gravel.
	10	1.7	45-47	3, 6, 11, 21		45	Top 0.6': Coarse tan SAND trace gravel. Bottom 1.1': Fine tan SAND.
0	11	1.0	50-52	4, 8, 11, 15		50	Top 0.4': Coarse orange SAND and gravel. Middle 0.2': Medium brown SAND. Bottom 0.4': Tan to white coarse SAND and gravel, wet at ~52.5'.
	12	1.8	55-57	Not Recorded		55	All coarse brown SAND and gravel, wet.
						60	
						65	
						70	
						75	

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 12/18

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



.41 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING
2 INCH DIAMETER,

☐ BACKFILL
☒ GROUT cement/bentonite

45 FT.

BENTONITE ☐ SLURRY ☐ PELLETS

47 FT.

49.45 FT.

WELL SCREEN
2 INCH DIAMETER,
PVC .010 SLOT

#1 GRAVEL PACK

59.45 FT.

65 FT.

NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y

WELL NO. MW-4 PERMIT NO. ______

TOWN/CITY Hicksville

COUNTY Nassau STATE New York

LAND-SURFACE ELEVATION
AND DATUM 74.07 FEET ☒ SURVEYED
Arbitrary ☐ ESTIMATED

INSTALLATION DATE(S) 03/05/91

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR Marine Pollution Control

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS

WATER REMOVED DURING DEVELOPMENT ~300 GALLONS

STATIC DEPTH TO WATER 50.76 FEET BELOW M.P.

PUMPING DEPTH TO WATER N/D FEET BELOW M.P.

PUMPING DURATION 1 HOURS

YIELD N/D GPM 5 DATE 03/11/91

SPECIFIC CAPACITY ______ GPM/FT.

WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable.

HYDROGEOLOGIST Eric Arnesen

NVIRONMENTAL CONSULTING & MANAGEMENT
OUX ASSOCIATES, INC.

GEOLOGIC LOG

tudy No. 07710Y Date
Project A.G.O. Associates
lient Gibbs & Hill, Inc.
age 1 of 2
Logged By Eric Arnesen
ell No. MW-5
ocation Hicksville, New York
M.P. Elevation 76.58 ft.
rilling Started 3/6/91 Ended 3/6/91
riller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 65
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 59.82
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	54.50	
3/11/91	54.58	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 40 minutes at 5 gpm
~200 gallons removed 20 NTU's

D (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	1		0-2	cuttings		0	FILL
	2	0.8	5-7	12, 12, 12, 12	SAND and GRAVEL	5	All tan coarse SAND with gravel.
0	3	NR	10-12	5, 9, 11, 15		10	Pushing an obstruction.
0	4	0.8	15-17	5, 14, 11, 12		15	White to brown coarse SAND trace gravel.
	5	1.3	20-22	4, 8, 10, 14		20	All tan and orange coarse SAND and gravel.
	6	1.0	25-27	5, 10, 13, 15		25	Top 0.7: Tan coarse SAND. Bottom 0.3': Orange coarse SAND trace gravel.
	7	1.0	30-32	5, 10, 10, 15		30	All brown and tan coarse SAND, gravel and cobbles.
	8	1.4	35-37	4, 7, 13, 20		35	All brown and orange coarse SAND and cobbles.

Ref. 16 14118

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-5
Location Hicksville, New York
M.P. Elevation 76.58 ft.
Drilling Started 3/6/91 Ended 3/6/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 65
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 59.82
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	54.50	
3/11/91	54.58	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 40 minutes at 5 gpm
~200 gallons removed 20 NTU's

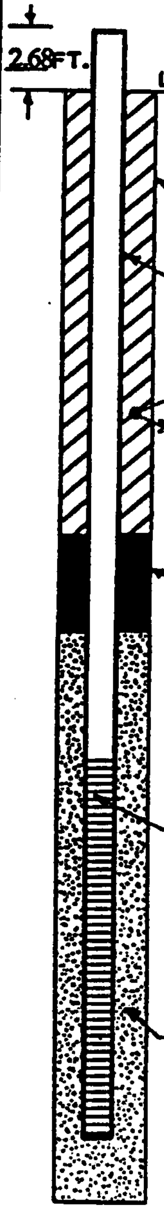
PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	9	1.7	40-42	4, 8, 11, 14		40	Top 0.8': Brown and orange medium SAND trace gravel. Bottom 0.8': Tan to white medium SAND.
0	10	1.7	45-47	5, 6, 8, 12		45	All brown to white medium SAND trace gravel.
0	11	1.0	50-52	4, 6, 8, 11		50	Top 1.0': Tan to white medium SAND trace gravel. Bottom 0.6': Coarse SAND and gravel, tan tip slightly wet. Water table at 52'.
	12	1.8	55-57	Not Recorded		55	all brown coarse SAND trace gravel; Wet.
						60	
						65	
						70	
						75	

REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 15/18

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



2.68 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING
2 INCH DIAMETER,

☐ BACKFILL
☒ GROUT cement/bentonite

45.5 FT.

BENTONITE ☐ SLURRY ☐ PELLETS

47.5 FT.

49.82 FT.

WELL SCREEN
2 INCH DIAMETER,
PVC .010 SLOT

#1 GRAVEL PACK

59.82 FT.

65 FT.

NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y

WELL NO. MW-5 PERMIT NO.

TOWN/CITY Hicksville

COUNTY Nassau STATE New York

LAND-SURFACE ELEVATION AND DATUM 73.9 FEET ☒ SURVEYED
Arbitrary ☐ ESTIMATED

INSTALLATION DATE(S) 03/05/91

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR Marine Pollution Control

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS

WATER REMOVED DURING DEVELOPMENT ~200 GALLONS

STATIC DEPTH TO WATER 54.50 FEET BELOW M.P.

PUMPING DEPTH TO WATER N/D FEET BELOW M.P.

PUMPING DURATION .66 HOURS

YIELD N/D GPM 5 DATE 03/11/91

SPECIFIC CAPACITY N/D GPM/FT.

WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable.

HYDROGEOLOGIST Eric Arnesen

Kej. 10, 16118

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/20/21/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 1 of 2
Logged By Eric Arnesen
Well No. MW-6
Location Hicksville, New York
M.P. Elevation 77.33 ft.
Drilling Started 02/20/91 Ended 02/21/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 65.00
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 62.55
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S
3/11/91	53.77	
3/11/91	54.08	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 30 minutes at 5 gallons per minute, 150 gallons removed 45 NTU.

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	1		0-2	Hand dug	SANDY CLAY	0	Brown medium sandy CLAY and gravel, organic material.
0	2	0.3	5-7	1, 4, 9, 11		5	Brown medium sandy CLAY and gravel, organic material.
0	3	0.3	10-12	7, 6, 5, 6		10	Brown sandy CLAY and gravel, some brick.
0	4	1.5	15-17	1, 10, 27, 50	SAND	15	Top 0.3': Brown sandy CLAY and SHALE 0.35':Black coarse SAND and gravel with medium SAND. Bottom 0.55': Fine tan SAND and medium brown SAND and gravel and cobbles.
0	5	1.3	20-22	8, 10, 32, 27		20	Top 0.35': Cobbles with brown coarse SAND and gravel. Bottom 0.95': All orange brown coarse SAND and gravel.
0	6	1.2	25-27	1 for 12"-8-20		25	All light brown coarse SAND and gravel.
0	7	1.0	30-32	6, 16, 17, 8		30	Top 0.6': All light brown coarse SAND and gravel. Bottom 0.4': Coarse light brown SAND trace gravel.
	8	1.1	35-37	7, 10, 10, 20		35	Top 0.2': Light brown coarse SAND and gravel. 0.15': Red gravel 0.4': Medium white SAND. Bottom 0.31': Coarse light brown SAND and gravel.

Ref 16, 17/18

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

GEOLOGIC LOG

Study No. 07710Y Date 2/20/21/91
Project A.G.O. Associates
Client Gibbs & Hill, Inc.
Page 2 of 2
Logged By Eric Arnesen
Well No. MW-6
Location Hicksville, New York
M.P. Elevation 77.33 ft.
Drilling Started 02/20/91 Ended 02/21/91
Driller Marine Pollution Control
Type of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.) 65.00
Casing Diam. (in.) 2
Casing Length (ft.) 10
Screen Setting (ft.) 62.55
Screen Slot & Type .010 PVC
Well Status Monitoring

G-W READINGS (1)

Date	DTW MP (2)	Elev. W.S.
3/11/91	53.77	
3/11/91	54.08	

SAMPLER

Type Split Spoon
Hammer 140 lb.
Fall 30 in.

DEVELOPMENT

Waterra pump for 30 minutes at 5 gallons per minute, 150 gallons removed 45 NTU.

PID (ppm)	SAMPLE No.	Rec.	Depth	Blows 6	Strata Change & Gen. Desc.	Depth (ft)	SAMPLE DESCRIPTION
0	9	1.2	40-42	12, 10, 14, 8		40	Top 0.5': Coarse orange SAND and gravel. Bottom 0.7': White and orange medium SAND.
0	10	1.4	45-47	6, 3, 3, 4		45	All light brown medium SAND.
0	11	0.9	50-52	8, 18, 20, 13		50	All white to light brown medium SAND with trace cobbles.
0	12	1.5	55-57	6, 6, 7, 12		55	Top 0.8': Coarse brown SAND. Bottom 0.7': Medium brown SAND, wet. Water table at 55 feet.
0	13	1.7	60-62	5, 6, 8, 9		60	Top 1.3': Medium to coarse brown SAND trace gravel. Bottom 0.4': Coarse orange and brown SAND and gravel, wet.
						65	
						70	
						75	

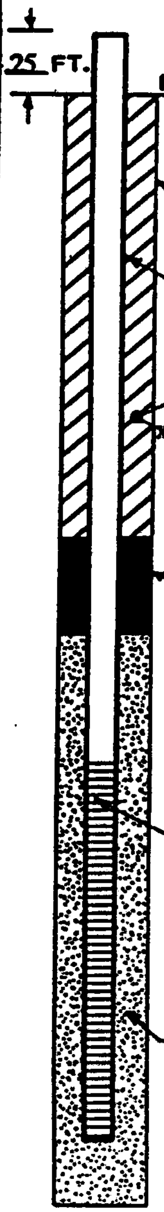
REMARKS (1) in feet relative to a common datum
(2) from top of PVC casing

Ref. 16, 18118

ROUX

Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



.25 FT.

LAND SURFACE

10 INCH DIAMETER, DRILLED HOLE

WELL CASING

2 INCH DIAMETER,

☐ BACKFILL

☒ GROUT cement/bentonite

48 FT.

BENTONITE ☐ SLURRY ☒ PELLETS

50 FT.

52.55 FT.

WELL SCREEN

2 INCH DIAMETER,

PVC .010 SLOT

#1 GRAVEL PACK

62.55 FT.

65 FT.

NOTE:
ALL DEPTHS IN FEET BELOW LAND SURFACE

PROJECT NAME A.G.O. Associates NUMBER 07710Y

WELL NO. MW-6 PERMIT NO.

TOWN/CITY Hicksville

COUNTY Nassau STATE New York

LAND-SURFACE ELEVATION AND DATUM 77.58 FEET ☒ SURVEYED

Arbitrary ☐ ESTIMATED

INSTALLATION DATE(S) February 20 & 21, 1991

DRILLING METHOD Hollow Stem Auger

DRILLING CONTRACTOR Marine Pollution Control

DRILLING FLUID None

DEVELOPMENT TECHNIQUE(S) AND DATE(S)

Waterra Pump 3/11/91

FLUID LOSS DURING DRILLING N/A GALLONS

WATER REMOVED DURING DEVELOPMENT ~150 GALLONS

STATIC DEPTH TO WATER 53.77 FEET BELOW M.P.

PUMPING DEPTH TO WATER N/D FEET BELOW M.P.

PUMPING DURATION .5 HOURS

YIELD N/D GPM 5 DATE 03/11/91

SPECIFIC CAPACITY N/D GPM/FT.

WELL PURPOSE Monitoring

REMARKS N/D - Not Determined. N/A - Not Applicable.

HYDROGEOLOGIST Eric Arnesen

REFERENCE 17

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

Ref 17, 118

WELL SAMPLING DATA FORM

CLIENT Gibbs & Hill
PROJECT NO. 07710Y
LOCATION Hicksville, NY

WELL NUMBER MW-1
DATE 3/26/91
WEATHER Sunny and Pleasant, 50's
SAMPLED BY K. Klotzer, E. Arnesen

TYPE OF WELL Monitoring
STORAGE TANK -
TIME OF START 9:50am
TIME OF FINISH 10:30am

DEPTH TO BOTTOM OF WELL	58.70	FT.
DEPTH TO WATER	49.85	FT.
WATER COLUMN	8.85	FT.
VOLUME OF WATER IN WELL	1.30	GAL.
VOLUME OF WATER TO REMOVE	5.20	GAL.
VOLUME REMOVED	6.66	GAL.

RATE OF PURGE .66 gal./min.
METHOD OF PURGE Bladder Pump

PHYSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
9:50am	6.33	1688	20°C	13NTU	N/A	N/A

TYPES OF SAMPLES COLLECTED

-TCL Metals
-TCL Volatiles
-TCL Semi-Volatiles
-TCL Pesticides/PCB's
-Full TCL-pH, Specific Conductance, COD, TDS, TSS

LABORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

ROUX ASSOCIATES INC.

Ref. 17, 218

WELL SAMPLING DATA FORM

CLIENT: Gibbs & Hill
PROJECT NO.: 07710Y
LOCATION: Hicksville, NY

WELL NUMBER: MW-2
DATE: 3/26/91
WEATHER: Sunny and Pleasant, 50's
SAMPLED BY: K. Klotzer, E. Arnesen

TYPE OF WELL: Monitoring
STORAGE TANK:
TIME OF START: 11:45am
TIME OF FINISH: 12:15pm

DEPTH TO BOTTOM OF WELL	68.25	FT.
DEPTH TO WATER	60.41	FT.
WATER COLUMN	8.53	FT.
VOLUME OF WATER IN WELL	1.25	GAL.
VOLUME OF WATER TO REMOVE	5.00	GAL.
VOLUME REMOVED	6.00	GAL.

RATE OF PURGE: .66 gal./min.
METHOD OF PURGE: Bladder Pump

PHYSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
11:45am	6.55	324	17°C	12NTU	N/A	N/A

TYPES OF SAMPLES COLLECTED

- -TCL Metals
- -TCL Volatiles
- -TCL Semi-Volatiles
- -TCL Pesticides/PCB's
- -Full TCL-pH, Specific Conductance, COD, TDS, TSS

LABORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC.

Ref. 17, 318

WELL SAMPLING DATA FORM

CLIENT Gibbs & Hill
PROJECT NO. 07710Y
LOCATION Hicksville, NY

WELL NUMBER MW-3
DATE 3/26/91
WEATHER Sunny and Pleasant, 50's
SAMPLED BY K. Klotzer, E. Arnesen

TYPE OF WELL Monitoring
STORAGE TANK -
TIME OF START 11:00am
TIME OF FINISH 11:35am

DEPTH TO BOTTOM OF WELL	67.49	FT.
DEPTH TO WATER	60.49	FT.
WATER COLUMN	9.58	FT.
VOLUME OF WATER IN WELL	1.40	GAL.
VOLUME OF WATER TO REMOVE	5.61	GAL.
VOLUME REMOVED	6.00	GAL.

RATE OF PURGE .66 gal./min.
METHOD OF PURGE Bladder Pump

PHYSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
11:00am	6.72	1153	20°C	30NTU	N/A	N/A

TYPES OF SAMPLES COLLECTED
- TCL Metals
- TCL Volatiles
- TCL Semi-Volatiles
- TCL Pesticides/PCB's
- Full TCL-pH, Specific Conductance, COD, TDS, TSS

LABORATORY NAME AND LOCATION
H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

ROUX ASSOCIATES INC

Kf. 17, 418

WELL SAMPLING DATA FORM

CLIENT Gibbs & Hill
PROJECT NO. 07710Y
LOCATION Hicksville, NY

WELL NUMBER MW-4
DATE 3/27/91
WEATHER Cloudy and Pleasant, 50's
SAMPLED BY K. Klotzer, E. Arnesen

TYPE OF WELL Monitoring
STORAGE TANK -
TIME OF START 9:30am
TIME OF FINISH

DEPTH TO BOTTOM OF WELL 59.10 FT.
DEPTH TO WATER 50.70 FT.
WATER COLUMN 8.40 FT.
VOLUME OF WATER IN WELL 1.23 GAL.
VOLUME OF WATER TO REMOVE 4.92 GAL.
VOLUME REMOVED 5.25 GAL.

RATE OF PURGE .75 gal./min.
METHOD OF PURGE Bladder Pump

PHYSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed.

FIELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
9:30	6.43	841	11°C	34 NTU	N/A	N/A

TYPES OF SAMPLES COLLECTED

- TCL Metals
- TCL Volatiles
- TCL Semi-Volatiles
- TCL Pesticides/PCB's
- Full TCL, pH, Specific Conductance, COD, TDS, TSS

LABORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

Ref. 17, 518

WELL SAMPLING DATA FORM

CLIENT: Gibbs & Hill
PROJECT NO.: 07710Y
LOCATION: Hicksville, NY

WELL NUMBER: MW-5
DATE: 3/27/91
WEATHER: Cloudy and Mild, 50's
SAMPLED BY: K. Klotzer, E. Arnesen

TYPE OF WELL: Monitoring
STORAGE TANK: -
TIME OF START: 11:30am
TIME OF FINISH:

EPTH TO BOTTOM OF WELL: 59.82 FT.
EPTH TO WATER: 53.31 FT.
WATER COLUMN: 8.83 FT.
OLUME OF WATER IN WELL: 1.29 GAL.
OLUME OF WATER TO REMOVE: 5.16 GAL.
OLUME REMOVED: 7.50 GAL.

ATE OF PURGE: .75 gal./min.
ETHOD OF PURGE: Bladder Pump

YSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed.

ELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
11:30am	6.47	703	11°C	7 NTU	N/A	N/A

ES OF SAMPLES COLLECTED

-TCL Metals
-TCL Volatiles
-TCL Semi-Volatiles
-TCL Pesticides/PBC's
-Full TCL-pH, Specific Conductance, COD, TDS, TSS
-MS and MSD taken at MW-5

BORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

Ref. 17, 618

WELL SAMPLING DATA FORM

CLIENT	Gibbs & Hill
PROJECT NO.	07710Y
LOCATION	Hicksville, NY

WELL NUMBER	MW-6	TYPE OF WELL	Monitoring
DATE	3/26/91	STORAGE TANK	-
WEATHER	Sunny and Pleasant, 50's	TIME OF START	12:30pm
SAMPLED BY	K. Klotzer, E. Arnesen	TIME OF FINISH	1:30pm

EPTH TO BOTTOM OF WELL	59.45	FT.
EPTH TO WATER	50.05	FT.
WATER COLUMN	9.40	FT.
VOLUME OF WATER IN WELL	1.38	GAL.
OLUME OF WATER TO REMOVE	5.52	GAL.
OLUME REMOVED	6.00	GAL.

ATE OF PURGE	.66 gal./min.
ETHOD OF PURGE	Bladder Pump

YSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed

ELD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
12:30pm	6.07	787	16°C	5 NTU	N/A	N/A

PES OF SAMPLES COLLECTED

-TCL Metals
-TCL Volatiles
-TCL Semi-Volatiles
-TCL Pesticides/PCB's
-Full TCL-pH, Specific Conductance, COS, TDS, TSS
-Duplicate taken at MW-6, labeled MW-X

BORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A- Not Applicable

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

Ref. 17, 7/8

WELL SAMPLING DATA FORM

CLIENT: Gibbs & Hill
ROJECT NO.: 07710Y
OCATION: Hicksville, NY

ELL NUMBER: MW-7
ATE: 3/27/91
EATHER: Cloudy and Mild, 50's
SAMPLED BY: K. Klotzer, E. Arnesen

TYPE OF WELL: Monitoring
STORAGE TANK: -
TIME OF START: 10:35am
TIME OF FINISH:

EPTH TO BOTTOM OF WELL: 68.50 FT.
EPTH TO WATER: 51.88 FT.
WATER COLUMN: 16.62 FT.
OLUME OF WATER IN WELL: 2.43 GAL.
LUME OF WATER TO REMOVE: 9.75 GAL.
OLUME REMOVED: 11.25 GAL.

TE OF PURGE: .75 gal./min.
THOD OF PURGE: Bladder Pump

YSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed

LD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
10:35am	6.53	887	11°C	39 NTU	N/A	N/A

ES OF SAMPLES COLLECTED
- -TCL Metals
- -TCL Volatiles
- -TCL Semi-Volatiles
- -TCL Pesticides/PCB's
- -Full TCL-pH, Specific Conductance, COD, TDS, TSS

BORATORY NAME AND LOCATION
H2M Labs., Inc.
elville, NY

N/A- Not Applicable

Ref 17, C18

WELL SAMPLING DATA FORM

CLIENT: Gibbs & Hill
PROJECT NO.: 07710Y
OCATION: Hicksville, NY

WELL NUMBER: MW-8
ATE: 3/27/91
EATHER: Cloudy and Mild, 50's
SAMPLED BY: K. Klotzer, E. Arnesen

TYPE OF WELL: Monitoring
STORAGE TANK: -
TIME OF START: 10:10am
TIME OF FINISH:

EPTH TO BOTTOM OF WELL	67.95	FT.
EPTH TO WATER	51.24	FT.
ATER COLUMN	16.71	FT.
VOLUME OF WATER IN WELL	2.45	GAL.
LUME OF WATER TO REMOVE	9.80	GAL.
LUME REMOVED	12.75	GAL.

TE OF PURGE: .75 gal./min.
THOD OF PURGE: Bladder Pump

YSICAL APPEARANCE/COMMENTS

-Water clear, became cloudy as sampling progressed

LD MEASUREMENTS

TIME	pH	COND	TEMP	TURB	Eh	O^2
10:10am	6.57	1204	17°C	49 NTU	N/A	N/A

ES OF SAMPLES COLLECTED

-TCL Metals
-TCl Volatiles
-TCL Semi-Volatiles
-TCL Pesticides/PCB's
-Full TCL-pH, Specific Conductance, COD, TDS, TSS

BORATORY NAME AND LOCATION

H2M Labs., Inc.
Melville, NY

N/A - Not Applicable

REFERENCE 18

SITE INSPECTION REPORT

NYSDEC SITE NO. :	130029
SITE NAME:	A.G.O. Associates
SITE LOCATION:	499 West John Street Hicksville, New York
DATE OF INSPECTION:	Friday, February 3, 1989
WEATHER:	Wet, 40^{o} F
SITE STATUS:	Active
YEARS OF OPERATION:	1960s to present
AGENCY PERFORMING INSPECTION:	YEC, Inc., NYSDEC's subcontractor
INSPECTED BY:	Marie McDonnell, Staff Geologist Gregory Fabijanic, Staff Engineer
SITE REPRESENTATIVES INTERVIEWED:	Richard Sangiovanni, Asphalt Plant Manager Richie, Visitor

The site inspection at A.G.O. Associates included the following:

(1) An interview with site representatives;

(2) Ambient air monitoring onsite using an HNu photoionization detector;

(3) A visual inspection of the site to determine locations of structures, equipment, fences, and to search for suspicious drums, tanks or similar signs of hazardous waste released to the environment; and

(4) Photodocumentation of the site.

At 9:00 am, Gregory Fabijanic and Marie McDonnell went to Nassau County Department of Health offices to review the files for A.G.O. Associates site on West John Street, Hicksville, New York.

At 10:00 hrs, following the file search, YEC personnel visited the site which is now owned by Twin County Asphalt Corporation to perform the site inspection. Two site representatives were interviewed - Richard Sangiovanni, Asphalt Plant Manager and a "visitor" by the name of "Richie" who preferred to remain anonymous. They expressed that they had never heard of A.G.O. Associates or had any knowledge of their previous ownership of the property. Mr. Sangiovanni stated that it was thought that a concrete plant company previously owned the site, having inquired from other employees on the subject of A.G.O. Associates. The inspection was performed accompanied by Mr. Sangiovanni.

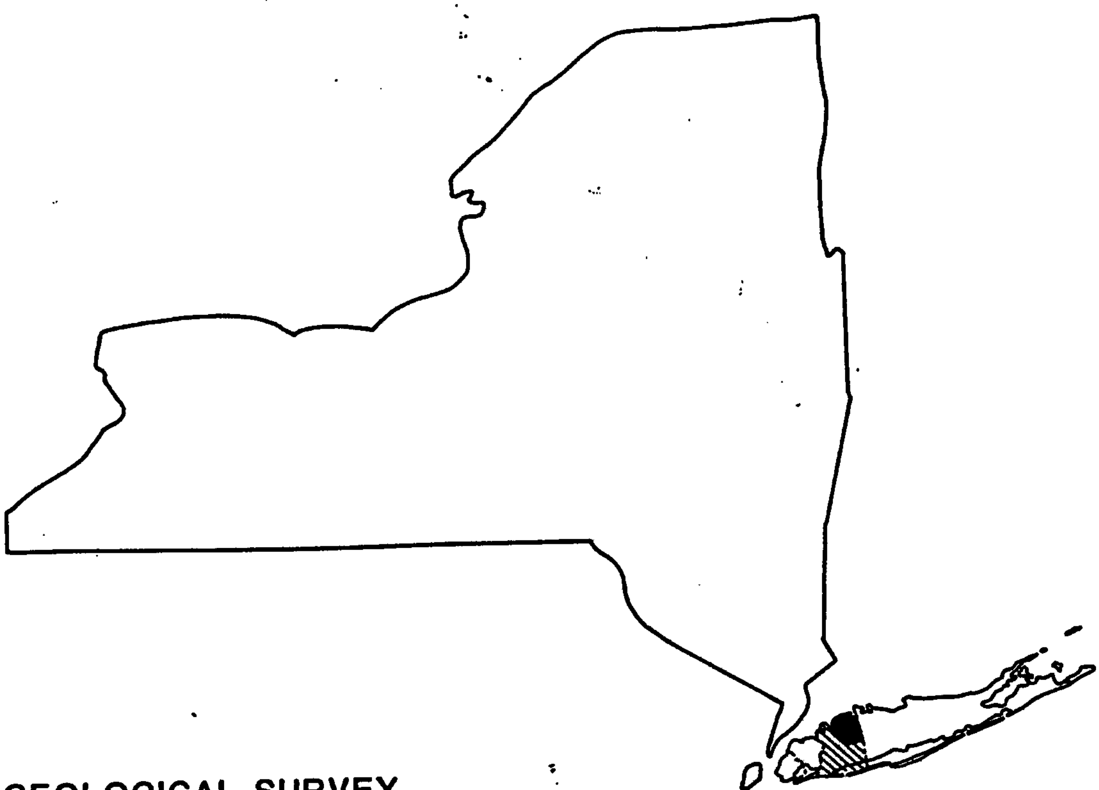
The site has an entrance off West John Street and is bordered to the south by Long Island Rail Road (Figure A). The site is located in a commercial/industrial area. With the exception of the southern boundary, the property is fenced. The area has been elevated with blend fill and leveled to provide a road bed for trucks and equipment. The facility's slope is approximately 0 - 2 percent. Presently Twin County Asphalt Corporation use the site for two basic operations - for asphalt generation and for crushing. The crushing operation has been going on for approximately 10 years. Old road bases forming large piles onsite are ground down to form a coarse aggregate and used for new road bases. Towards the rear of the site, a large kiln, oil storage tanks and asphalt storage tanks are utilized for asphalt production which has also been part of recycling operation since 1983.

During the site inspection, no suspicious hazardous waste disposal sites were observed. Photodocumentation of the site inspection is presented in Appendix A. Air monitoring was conducted throughout the site, upwind and downwind of the areas of concern, using an HNu photoionization detector. No readings above background were noted during the site visit.

REFERENCE 19

R. Busciolano [redacted]

Hydrogeology and Ground-Water Quality of the Northern Part of the Town of Oyster Bay, Nassau County, New York, in 1980



U.S. GEOLOGICAL SURVEY
Water-Resources Investigations
Report 85-4051

Prepared in cooperation with
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

NG 17, 2/11

Hydrogeology and Ground-Water Quality of the Northern Part of the Town of Oyster Bay, Nassau County, New York, in 1980

by Chabot Kilburn and Richard K. Krulikas

ABSTRACT

This report presents hydrogeologic and water-quality data from the northern part of the Town of Oyster Bay, in the north-shore area of Long Island. The ground-water reservoir underlying the area consists of clay, silt, sand, and gravel layers that form six hydrogeologic units. The units are, from bottom to top, the Lloyd aquifer, Raritan clay, Magothy aquifer, Port Washington aquifer, Port Washington confining unit, and the upper glacial aquifer. Crystalline bedrock underlies the Lloyd aquifer and forms the base of the ground-water system.

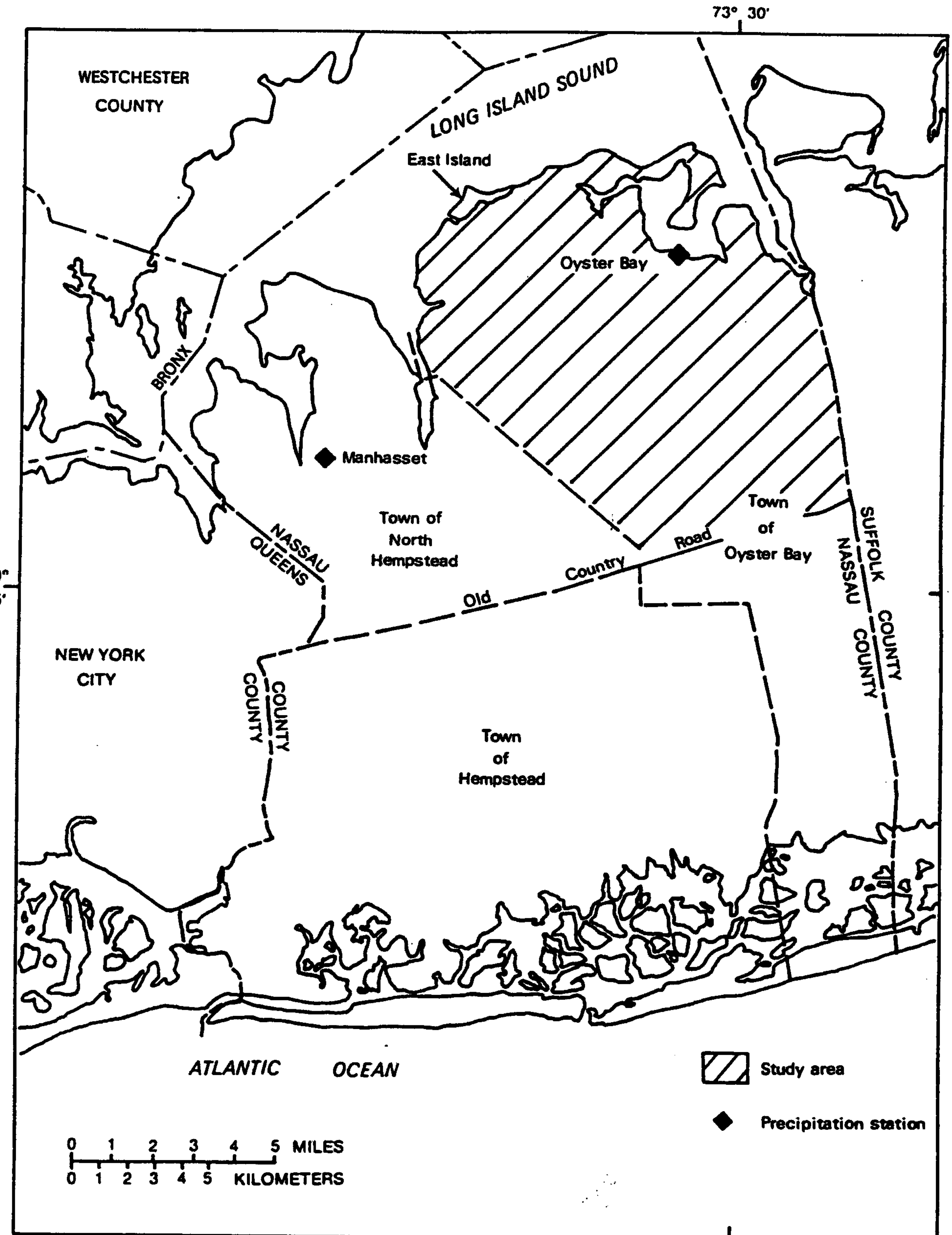
The regional drought of 1962-67 caused ground-water levels to decline as much as 16 feet, but the water-table altitude in 1980 equaled or exceeded predrought levels. Water levels measured in wells screened in the lower part of the Magothy aquifer and in the Lloyd aquifer throughout much of the area are still below those measured before the drought but are recovering. Water levels in wells screened in the Lloyd aquifer along the north shore have been declining since the mid-1970's.

Ground water in some areas contains nitrates, volatile organic compounds, and chloride in concentrations that exceed New York State drinking-water standards. Contamination is limited largely to the upper glacial aquifer and upper part of the Magothy aquifer.

Saltwater has been reported in some wells along the shore but probably represents a natural condition rather than saltwater encroachment due to excessive pumping.

INTRODUCTION

Ground water is the sole source of drinking water for all of Nassau County. Because population and ground-water use have increased significantly since the 1950's, proper development of this resource requires detailed knowledge of the hydrogeologic environment and ground-water-quality. The U.S. Geological Survey began a study in cooperation with the Nassau County Department of Public Works to document the hydrogeology of the County. The area of this investigation is the part of the Town of Oyster Bay that lies north of Old County Road (fig. 1). The area contains approximately 71 mi^2, or 63 percent of the town's 112-mi^2 area.



Base from U.S. Geological Survey
1:250,000 series New York, 1960.

Figure 1.--Location of northern part of Town of Oyster Bay.

HYDROGEOLOGY

The ground-water reservoir underlying the northern part of the Town of Oyster Bay consists of unconsolidated glacial deposits of Pleistocene age and coastal-plain deposits of continental and marine origin of Late Cretaceous age. These unconsolidated deposits consist of gravel, sand, silt, and clay and are underlain by bedrock of early Paleozoic and (or) Precambrian age. The bedrock, which is relatively impermeable, forms the base of the ground-water reservoir.

The thickness, character, and water-bearing properties of the aquifer and the relationships between hydrogeologic and geologic units underlying the study area are depicted in table 1. The correlations should be considered direct relationships as implied in the tables. The upper and lower boundaries of the hydrogeologic units are determined mainly from gross lithologic differences between units rather the age of the deposits, which forms the basis for geologic correlations. For example, the upper and lower limits of the confining units (Port Washington confining unit and Raritan clay) are placed at intervals where the lithologic sequence changes from predominantly clay to sand or sand and gravel, and these positions may have no time-stratigraphic significance. For this reason, and because differentiation between sediments of Pleistocene and Cretaceous age is difficult and uncertain, it is possible that some deposits of Pleistocene age have been included in the upper part of the Magothy aquifer, which, by present definition, is approximately equivalent to the Magothy Formation-Matawan Group, undifferentiated, of Late Cretaceous age. The three hydrogeologic sections (pl. 1B) show the inferred extent, lateral and vertical relationships, and the variations in depth, thickness, lithology, and structure of these units.

Description of Hydrogeologic Units

Bedrock

Bedrock of early Paleozoic and(or) Precambrian age underlies all of western Long Island (Fisher and others, 1962). The bedrock generally consists of metamorphic and igneous crystalline rocks--schist, gneiss, and granite--and lies at depths ranging from about 350 ft below sea level along the north shore to about 950 ft below sea level in the southeast part of the study area (pl. 2A, and hydrogeologic sections, pl. 1B).

Bedrock is generally regarded as the base of the ground-water reservoir on Long Island because of its density and low permeability. No wells in the Town of Oyster Bay are known to obtain water from bedrock.

Lloyd Aquifer

The Lloyd aquifer is the equivalent of the Lloyd Sand Member of the Raritan Formation of Late Cretaceous age (Cohen and others, 1968, p. 18). It consists of discontinuous layers of gravel, sand, sandy clay, silt, and clay, and lies roughly parallel to the bedrock surface at depths ranging from about

Table 1.--Summary of geology and water-bearing properties of deposits underlying the northern part of Town of Oyster Bay, Nassau County, New York.

[Modified from Swarzenski (1963) and Isbister (1966)]

System	Series	Geologic unit	Hydrogeologic unit	Approximate range in thickness (feet)	Character of deposits forming geologic unit (modified from Swarzenski, 1963, and Isbister, 1966)	Water-bearing properties
QUATERNARY	Holocene	Undifferentiated artificial fill, salt-marsh and swamp deposits, stream alluvium, and shore deposits	Upper glacial aquifer	0 - 50	Sand, gravel, silt, and clay; organic mud, peat, loam, and shells. Colors are gray, green, black, and brown.	Permeable zones near the shore and in stream valleys may yield small quantities of fresh or brackish water at shallow depths. Clay and silt beneath the north-shore harbors retard saltwater encroachment and confine underlying aquifers.
	Pleistocene	Upper Pleistocene deposits		10 - 380	Till, composed of unsorted clay, sand, gravel, and boulders. Outwash deposits of stratified brown sand and gravel. May also contain some lacustrine and marine deposits consisting of clay, silt, and sand; locally fossiliferous.	Till, relatively impermeable, may cause local conditions of perched water and impede downward percolation of precipitation. Outwash deposits of sand and gravel are highly permeable. Wells screened in glacial outwash deposits yield as much as 1,750 gal/min. Specific capacities of large-capacity wells range from 14 to 175 (gal/min)/ft of drawdown. Water is generally fresh and unconfined but may locally contain saltwater near shores.
		Unconformity				
CRETACEOUS - QUATERNARY	Upper Cretaceous, Pleistocene, and Holocene(?)	Deposits of Holocene(?) and Pleistocene age, undifferentiated. May locally include eroded remnants of the clay member of the Raritan Formation.	Port Washington confining unit	0 - 360	Clay, solid and silty, gray, gray-green, white, red, mottled, and brown, containing lenses or layers of sand or sand and gravel. May locally contain lignite, shells, foraminifera, and other microfossils.	Relatively impermeable throughout much of the area. May be moderately to highly(?) permeable in areas adjacent to inferred limit of Magothy aquifer where sand and sand and gravel content may be large. Confines water in underlying Port Washington and Lloyd aquifers but does not prevent movement of water between upper glacial aquifer and Port Washington aquifer. Lenses of sand and sand and gravel provide sources of water supply and may permit local interchange of water with adjacent formations. One large-capacity well had a reported yield of 2,000 gal/min with a specific capacity of 43 (gal/min)/ft of drawdown. Coarser deposits may locally contain saltwater near shores.
		Unconformity				
		Deposits of Pleistocene age, undifferentiated, and (or) local erosional remnants of the Lloyd Sand Member of the Raritan Formation.	Port Washington aquifer	0 - 170	Sand, fine to coarse, white, yellow, gray, and brown, or gray and gravel with interbedded clay, silt, and sandy clay.	Moderately to highly(?) permeable. One large-capacity well had a reported yield of 1,100 gal/min with a specific capacity of 11 (gal/min)/ft of drawdown. Water is confined under artesian pressure. Generally contains freshwater but may have high iron content.

CRETACEOUS	Upper Cretaceous	Unconformity — Matawan Group Magothy Formation-undifferentiated	Magothy aquifer	0 - 610	Clay, silt, sandy clay, and sand, fine to medium, clayey, white, gray, yellow, pink, and multicolored, in lenticular beds. May contain lenticular beds of coarse sand and gravel in lower part of unit. Lignite, pyrite, and iron oxide concretions may occur throughout the unit.	Moderately to highly permeable. Wells screened in lower part of aquifer yield as much as 1,400 gal/min. Specific capacities of large-capacity wells commonly range from 10 to 50 (gal/min)/ft of drawdown but may be as high as 80 (gal/min)/ft. Aquifer is principal source for public supply. Water is generally of excellent quality. Degree of confinement under artesian pressure is variable; however, artesian conditions increase with depth. Hydraulic continuity may exist between the Magothy aquifer and contiguous Pleistocene aquifers.
		Unconformity — Raritan Formation: Clay member	Raritan clay confining unit	0 - 185	Clay, solid and silty, gray, white, red, and mottled. May contain lenses or layers of fine to medium sand which may locally contain gravel. Sand layers frequently occur near top of unit. Lignite and pyrite are common.	Relatively impermeable. Confines water in underlying Lloyd aquifer but does not prevent movement of water between Magothy and Lloyd aquifers.
		Raritan Formation: Lloyd Sand Member	Lloyd aquifer	0 - 195	Sand, fine to coarse, white, yellow, or gray, and gravel, commonly in a clayey matrix. Contains lenses and layers of solid or silty clay. Beds are usually lenticular and frequently show great lateral changes in composition.	Moderately permeable. Large-capacity wells may yield as much as 1,600 gal/min; specific capacities commonly range from 10 to 19 (gal/min)/ft of drawdown. Water is confined under artesian pressure; some wells flow. Water is generally of excellent quality but may have high iron content.
		Unconformity — Crystalline rocks	Bedrock	Not known	Metamorphic and igneous rocks; muscovite-biotite schist, gneiss, and granite(?). May have weathered zone at top.	Relatively impermeable. Contains some water in fractures, but impracticable to develop owing to low permeability.

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200 ft below sea level along the north shore to about 700 ft below sea level in the southeast part of the study area (pl. 2B). Its thickness ranges from 0 to 250 ft from northwest to southeast, respectively.

The Lloyd aquifer is a major aquifer in the Town of Oyster Bay. It is probably hydraulically continuous with the adjacent Port Washington aquifer and upper glacial aquifer in the northern part of the study area. Water in the Lloyd aquifer is confined under artesian pressure beneath the Raritan clay.

Well yields during test pumping of large-capacity public-supply wells screened in the Lloyd aquifer have ranged from 500 gal/min to as much as 1600 gal/min.

Raritan Clay

The Raritan clay is a distinct hydrogeologic unit that extends throughout much of the Town of Oyster Bay (pl. 3A). In this area, the Raritan clay may be equivalent to the unnamed clay member of the Raritan Formation of Late Cretaceous age. The Raritan clay consists mainly of light to dark gray, red, white, or yellow clay and variable amounts of silt, and clayey silty fine sand. Sandy beds of varying thickness are common. The top of the Raritan clay is roughly parallel to that of the underlying Lloyd sand member. The upper-surface altitude of the Raritan clay ranges from 150 ft below sea level along the north shore to about 550 ft below sea level in the southeastern part of the study area. Its thickness ranges from 0 to 200 ft from northwest to southeast, respectively.

The Raritan clay is a significant hydrogeologic unit because it confines water in the underlying Lloyd aquifer. Although its hydraulic conductivity is very low, it does not entirely prevent movement of water between the Magothy and Lloyd aquifers. Some public-supply and other wells obtain part of their water supply from the sandy zones in the upper part of the Raritan clay.

Magothy Aquifer

The Magothy aquifer is the equivalent of the Matawan Group-Magothy Formation undifferentiated of upper Cretaceous age. Deposits in this unit consist of beds and lenses of light-gray, fine to coarse sand with some interstitial clay. Detailed lithologic descriptions are given in Soren (1978); Ku and others (1975); and Jensen and Soren (1974).

The top of the Magothy aquifer is not planar, unlike the surfaces of the underlying units. The Magothy surface was deeply eroded during Tertiary time and probably was considerably eroded in Pleistocene time. The upper surface altitude of the Magothy ranges from as high as 200 ft above sea level in the center of the study area to 200 ft below sea level along the northeast edge of the study area (pl. 3B). Its thickness ranges from 0 to 650 ft from northwest to southeast, respectively.

The Magothy aquifer is the principal aquifer underlying Long Island and is the island's main source of water for public supply. The sand beds within the aquifer are moderately to highly permeable. The reported yields during pumping tests of several public-supply wells screened in the Magothy aquifer in the Town of Oyster Bay ranged from 300 gal/min to as much as 1,500 gal/min. The average yield was about 1,000 gal/min.

The large amount of clay in the upper half of the aquifer causes the water to become increasingly confined with depth. Along the north shore, the Magothy aquifer is probably in hydraulic continuity with the adjacent Port Washington aquifer. The Magothy also has a generally high degree of hydraulic continuity with the overlying upper glacial aquifer, but the degree of continuity may vary considerably from place to place.

Port Washington Aquifer

Two previously unrecognized hydrogeologic units in the northern part of the Town of Oyster Bay are defined as the Port Washington aquifer and Port Washington confining unit. The units were first recognized in the northern part of the Town of North Hempstead (Kilburn, 1979). The inferred limits of the units are shown in plates 4A and 4B, and their relationships to the other hydrologic units are shown on the hydrogeologic sections on plate 1B.

The Port Washington aquifer is a sequence of deposits of Pleistocene and (or) Late Cretaceous age that underlie the north-shore area of the Town of Oyster Bay. The deposits form a distinct hydrogeologic unit that rests upon bedrock and is overlain by a thick sequence of confining clay. The south edge of the deposits overlap and abut the adjacent Cretaceous units. The sediments of the Port Washington aquifer form part of the valley fill in the channels cut into the Cretaceous deposits. These deposits consist largely of sand or sand and gravel and varying amounts of interbedded clay, silt, and sandy clay.

The altitude of the top of the Port Washington aquifer ranges from 150 ft below sea level along the north shore to 450 ft below sea level along the south shore (pl. 4A). Its thickness ranges from 0 to more than 150 ft in the central parts of the study area.

The Port Washington aquifer is moderately to highly permeable and is a major aquifer in the northern parts of the Town of Oyster Bay. The reported yields during pumping tests of public-supply wells screened in the aquifer range from 300 gal/min to 1,200 gal/min. Water in the aquifer is confined beneath the Port Washington confining unit. The hydrogeologic relationships between the Port Washington aquifer and the abutting Lloyd, Magothy, and upper glacial aquifers, as shown in the hydrogeologic sections on plate 1B, suggest that these deposits could be in lateral hydraulic continuity. Potentiometric studies of the head in the Lloyd aquifer made by Swarzenski (1963), Kimmel (1973), and Kilburn (1979) tend to verify a lateral hydraulic continuity between the Port Washington and Lloyd aquifers.

Port Washington Confining Unit

The Port Washington confining unit is a sequence of deposits of Pleistocene or Late Cretaceous to Holocene(?) age that locally underlies the north shore. The unit consists mainly of clay and silt, with scattered lenses

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of sand or sand and gravel. (See Kilburn, 1979, for a more detailed description.) The deposits that form the Port Washington confining unit overlie the Port Washington aquifer or overlap the adjacent Cretaceous units and may form part of the valley fill that occupies channels cut into the other Cretaceous deposits. The unit may locally include or consist of erosional remnants of the clay member of the Raritan Formation.

The altitude of the top of the Port Washington confining unit ranges from 100 ft above sea level in the central part of the study area to 300 ft below sea level along the northeastern part (pl. 4B). Its thickness ranges from 0 to more than 150 ft in the central part of the study area.

Upper Glacial Aquifer

The upper glacial aquifer consists of deposits of late Pleistocene and Holocene age that overlie the Magothy aquifer and the Port Washington confining unit and locally abut against or overlie the Port Washington aquifer. The extent and relationships of these deposits to the adjacent hydrogeologic units are shown on plate 1B.

The upper deposits consist mainly of stratified beds of fine to coarse sand and of sand and gravel but also contain thin beds of silt and clay interbedded with coarse-grained material. The outwash that constitutes the bulk of the upper Pleistocene deposits is yellow and brown or, in some places, gray. (See Perlmutter, 1949, and Kilburn, 1979, for further descriptions.)

The upper glacial aquifer, which contains the water table in most of the area, transmits all recharge to the underlying aquifers. Precipitation filtering downward to the water table is the principal source of ground-water recharge. In the past, the upper glacial aquifer was tapped as a water supply by many public-supply wells. Because it has become contaminated by cesspool effluents, fertilizers, and other substances, however, its use for public supply has decreased. Wells tapping the aquifer are now used mainly to supply water for domestic use, irrigation, and commercial and industrial purposes.

The sand and gravel deposits in the upper glacial aquifer are highly permeable and yield large amounts of water to properly constructed wells. The yields of large-capacity public-supply wells screened in the aquifer have been reported to range from 400 gal/min to 1,400 gal/min.

The recent deposits of Holocene age along beaches, streams, swamps, and the bottoms of bays and lakes have not been differentiated from the upper glacial aquifer because they are too thin.

Correlation of Units

The differentiation between deposits of Pleistocene and Cretaceous age throughout most of the northern part of the Town of Oyster Bay is uncertain. On Long Island, the contact between Pleistocene and Cretaceous deposits is an erosional unconformity that is commonly marked by an abrupt lithologic and

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Water Movement

The lateral direction of ground-water flow can be estimated from water-table and potentiometric-surface maps. Ground water moves in the direction of decreasing head and perpendicular to the potentiometric contours. A vertical component of ground-water flow may also develop where differences in hydrostatic head are present with depth in an aquifer or between aquifers.

Upper Glacial Aquifer

The regional and local directions of lateral ground-water movement near the water table in the northern part of the Town of Oyster Bay are controlled from the regional and local ground-water divides (pl. 6A). Other smaller, local ground-water divides (not shown) are present on Mill Neck, Centre Island, and Cove Neck.

The lateral direction of ground-water movement near the water table is indicated on plate 6A by arrows. Water on the south side of the regional divide moves southward to discharge areas along the south shore; water north of the regional divide moves in two directions. Ground water east of the principal local divide shown on plate 6A moves toward discharge areas along or underlying Long Island Sound, Mill Neck Creek, Oyster Bay Harbor, or Cold Spring Harbor, and ground water west of the principal local divide moves westward to discharge areas along Glen Cove Creek or into Hempstead Harbor. Some water along the divides moves directly downward until it meets a zone of low permeability (for example, a clay bed or the top of the Port Washington confining unit or the Raritan confining unit), where it is diverted laterally.

Hydrostatic head differences between the water table (pl. 6A) and the potentiometric surface in the lower part of the Magothy aquifer (pl. 5A) during March and April 1980 ranged from less than 1 ft to more than 20 ft throughout most of the area except near the shore. The head differences were such that recharge from the water table could move downward into the Magothy aquifer over most of the area. Cones of depression due to local ground-water pumpage are not shown on plate 6A because the observation wells in the area are spaced too broadly to provide adequate definition.

Magothy Aquifer

The directions of lateral and vertical ground-water movement in the Magothy aquifer are controlled by the position of the regional and local potentiometric divides and by the hydraulic gradients. (See pl. 5A.) Some of the ground water along the divides moves downward to the bottom of the aquifer, where it then moves laterally toward areas of natural discharge or active pumping wells.

The areas of natural discharge from the Magothy aquifer can be inferred from plates 5A and 6A. Discharge occurs wherever the hydrostatic head in the Magothy is greater than that in the adjacent or overlying units. Water discharges from the Magothy aquifer into the upper glacial aquifer in areas adjacent to Hempstead Harbor and Oyster Bay Harbor, and into the Port Washington confining unit elsewhere.

Hydrostatic heads in the Magothy aquifer in 1980 exceeded those in the Lloyd aquifer by as much as 50 ft throughout a large part of the area. This is due largely to the low permeability of the Raritan confining unit, which confines water in the Lloyd aquifer but does not prevent water from the areas of higher head in the Magothy from moving in the direction of decreasing head and perpendicular to the potentiometric contours.

Lloyd Aquifer

The Lloyd aquifer is recharged by water moving downward from the Magothy and upper glacial aquifers through the Raritan clay and Port Washington confining unit in response to the higher hydrostatic heads in the upper aquifers. The confining units impede but do not prevent this downward movement. The principal areas of recharge of the Lloyd aquifer are those underlying and adjacent to the regional and local potentiometric divides, where flow is predominantly downward (pl. 5B).

Areas of natural discharge of water from the Lloyd aquifer can be inferred from a comparison of heads in the Lloyd (pl. 5B), the Magothy (pl. 5A), and the water table (pl. 6A). Natural discharge from the Lloyd may occur in areas where the head in the Lloyd exceeds heads in overlying or adjacent units. These comparisons indicate that water from the Lloyd aquifer can move laterally and upward through the Port Washington aquifer (where present) and into the upper glacial aquifer, and thence into Hempstead Harbor (section C-C', pl. 1B). Other areas of discharge are along and beneath Long Island Sound (section A-A', pl. 1B). Some discharge may also occur in the Oyster Bay Harbor area (section C-C', pl. 1B) by movement of water upward through the Port Washington aquifer and Port Washington confining unit into the upper glacial aquifer and then into the harbor.

GROUND-WATER QUALITY

Data on ground-water quality in the northern part of the Town of Oyster Bay during 1950-79 are available mainly from analyses made by the Nassau County Department of Health. These analyses, together with those made by the U.S. Geological Survey, represent 155 wells. The number of samples per well during this period ranged from 1 to 37. The frequency of sampling varied, as did the constituents for which analyses were made. It was beyond the scope of this study to make a detailed study of water quality or to review the 2,168 analyses for obvious errors. It was assumed that the number of analyses in error was small enough to not significantly affect general interpretations of water quality that could be made from the analyses.

General Water Quality

Table 3 (p. 22) lists the median and range of the principal constituents and summarizes the general water quality of the three aquifers during 1950-79; table 4 summarizes the ground-water quality in the northern part of the Town of Oyster Bay in 1979. The analyses are arranged by aquifer to facilitate comparison and to demonstrate changes with depth.

REFERENCE 20

Ref: 20, 113

Geology and Hydrology of Northeastern Nassau County Long Island, New York

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1825

Prepared in cooperation with the Nassau County Department of Public Works and the New York State Water Resources Commission

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member of the Raritan Formation confines the Lloyd in most of the area, but in a few places confinement is provided by both the clay member of the Raritan Formation and by the Gardiners Clay (pl. 3). Bedrock forms the lower boundary of the deep confined aquifer.

RECHARGE

The deep confined aquifer is recharged entirely by water which moves downward from the principal aquifer through the confining beds (fig. 11). Comparison of the contours on the piezometric surfaces of the principal aquifer (fig. 10) and the deep confined aquifer (fig. 12) suggests that the deep confined aquifer receives some recharge nearly everywhere in the report area except in a narrow strip along part of the north shore where heads in the deep confined aquifer are higher than those in the basal part of the principal aquifer, and the movement of water is reversed. (See table 12 for vertical-head relations at Bayville.) The heads decrease upward along this strip showing that the vertical component of head is upward through the confining beds. No water moves into the deep confined aquifer of northeastern Nassau County from adjoining areas.

Because of scanty data, it is difficult to estimate recharge to the deep confined aquifer. The recharge probably averages between 0.1 and 0.2 mgd per sq mi; but owing to the wide range in vertical permeabilities of the clay member and in hydraulic gradients, recharge from some parts of the principal aquifer to the deep confined aquifer locally may be several times higher or lower than the average.

TABLE 12.—*Vertical head relations at Bayville on November 7, 1961*

Well	Screened depth (feet below land surface)	Water-bearing unit	Water level (feet above sea level)
N7193	15–18	Principal aquifer	2.72
7192	37–40	do	[1] 2.63
7191	139–142	[2]	10.88
7152	360–370	Deep confined aquifer	12.84

[1] Well screened in water having a chloride content as high as 5,400 p.p.m.
[2] Well screened in sandy zone in clay member of Raritan Formation.

PIEZOMETRIC SURFACE

The piezometric surface of the deep confined aquifer reflects artesian pressure in the aquifer. Changes in artesian pressure are in part compensated by the elasticity of the aquifer and to a lesser degree by water moving into and out of storage in the overlying beds of clay and silt.

miles from north to south. Six morphologic units exist in the project area: (1) the headlands, (2) the Harbor Hill terminal moraine, (3) the intermorainal pitted outwash plain, (4) the Ronkonkoma terminal moraine, (5) the Wheatley and Mannetto Hills, and (6) the glacial outwash plain. Land surface ranges from sea level along the shore of Long Island Sound to about 340 feet above sea level on the Ronkonkoma terminal moraine. Surface drainage is accomplished by north- and south-flowing streams, which have their headwaters in the Harbor Hill end moraine and the Ronkonkoma terminal moraine. Flow is usually intermittent in the upper reaches of the streams where they are fed by perched ground water and direct runoff. In the lower reaches of the north-flowing streams the flow is perennial because it is sustained by ground-water inflow. The south-flowing streams, which cross the glacial outwash plain, are effluent and their flow generally ceases a short distance below the headwaters. The climate of the report area is a modified continental type characterized by prevailing westerly winds, moderate temperatures, a moderate number of thunderstorms, and annual precipitation which averages about 45 inches.

Population and industry in the report area have grown rapidly since the early 1930's. The greatest expansion occurred after World War II when improved roads promoted the influx of industry and low-cost housing.

Northeastern Nassau County is underlain by unconsolidated deposits of Late Cretaceous, Tertiary, and Quaternary age, which overlie bedrock of Precambrian age. The deposits of Cretaceous age comprise the Raritan Formation, which is subdivided into the Lloyd Sand Member and an unnamed clay member, and the Magothy(?) Formation. Deposits of probable Tertiary age are represented by the Mannetto Gravel. The Jameco Gravel and the overlying Gardiners Clay are Pleistocene deposits of pre-Wisconsin age. The surface of nearly all the area is underlain by glacial till and related outwash deposits of late Pleistocene age. Relatively thin shoreline and marsh deposits of Recent age occur locally along the beaches, and alluvium is found in some stream valleys.

The ground-water reservoir in the unconsolidated deposits ranges in thickness from about 400 to about 1,300 feet. The upper limit is the water table, and the lower limit is the bedrock. The entire ground-water reservoir is an interconnected hydraulic system in which two major aquifers have been defined: the principal aquifer and the deep confined aquifer. Natural recharge to the principal aquifer from precipitation averages about 1 mgd per sq mi. The deep confined aquifer is recharged by downward leakage from the principal aquifer. Gross pumpage averaged about 43 mgd in 1960, of which 32.6 mgd was for public supply and 10.3 mgd was for industrial use. With-

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REFERENCE 21

A.G.O. Associates
Water Supply Worksheet

On May 3, 1995, Ebasco personnel conducted a file search at the Nassau County Department of Health to collect water supply information for Nassau County. Ebasco personnel copied maps identifying the location of all municipal water supply wells in Nassau County, New York, and obtained reports detailing water supply information.

There are eleven water supply companies that provided potable water to residents within a four-mile radius of the site. The total population served by a municipal system was divided by the number of municipal supply wells to obtain a population per well. It is assumed that no one well supplied more than 40% of the water to a particular system.

Bethpage Water District:

Nine wells supply 33,000 people; therefore, a population of 3,666 was assigned to each supply well.

Bowling Green Water District:

Two wells supply 12,000 people; therefore, a population of 6,000 was assigned to each supply well.

Carle Place Water District:

Five wells supply 10,000 people; therefore, a population of 2,000 was assigned to each supply well.

East Meadow Water District:

Eleven wells supply 50,000 people; therefore, a population of 4,545 was assigned to each supply well.

Hicksville Water District:

Twenty wells supply 47,810 people; therefore, a population of 2,391 was assigned to each supply well.

Jericho Water District:

Twenty two wells supply 58,000 people; therefore, a population of 2,636 was assigned to each supply well.

Ref. 21
2 of 9

A.G.O. Associates
Water Supply Worksheet (cont.)

Levittown Water District:

Twelve wells supply 50,000 people; therefore, a population of 4,167 was assigned to each supply well.

Old Westbury Village:

Five wells supply 3,200 people; therefore, a population of 640 was assigned to each supply well.

Plainview Water District:

Eleven wells supply 35,000 people; therefore, a population of 3,182 was assigned to each supply well.

Roosevelt Field Water District:

Five wells supply 1,900 people; therefore, a population of 380 was assigned to each supply well.

Westbury Water District:

Eleven wells supply 20,050 people; therefore, a population of 1,823 was assigned to each supply well.

References:
Ref. 22, pp. 1 through 17; Ref. 25, p. 1 of 1.

Mg 21, 319 (1)

A.G.O.

No wells From 0 - 1/2 mile From the site.

1/2 - 1 mile From the site - 6 wells

Water Supply Co	Well #	Well Depth (Ft)	Aquifer
Jerico Water District	7030	530	Magothy
Hicksville Water Dist.	3953	419	"
Hicksville	3878	478	"
Hicksville	9463	638	"
Westbury Water Dist.	5655	755	"
Westbury	6819	765	"

1 - 2 miles From the site - 73 wells

Water Supply Co.	Well #	Well Depth (Ft)	Aquifer
Old Westbury Village	152	478	Magothy
Westbury Water Dist	5007	494	"
Westbury	7353	390	"
Westbury	7602	800	Lloyd
Westbury	8497	539	Magothy
Bowling Green Water	6957	584	"
Bowling Green Water	6956	530	"
Levittown Water Dist	5301	377	"
Jericho Water Dist	4245	565	"
Hicksville Water Dist.	7561	550	"
Hicksville Water Dist	9212	601	"
"	5576	601	"
"	5336	573	"
"	5575	503	"
"	6192	676	"
"	9180	630	"
"	6193	467	"
"	10708	619	"
"	8779	555	"
"	8778	590	"
"	9488	575	"
	8249	495	
	7562	545	

2-3 miles from the site - 14 wells

Water Supply Co	Well #	Well Depth (FT)	Aquifer
Westbury Water Dist	8007	564	Magothy
"	101	341	"
"	7785	400	"
"	5654	538	"
Levittown Water Dist.	8321	674	"
Levittown	4451	403	"
Hicksville Water Dist.	10555	700	"
"	6190	600	"
"	6191	550	"
Plainview Water Dist	6580	596	"
Plainview	4097	465	"
Jericho Water Dist	6651	610	"
Jericho	7781	454	"
Jericho	8355	590	"

3-4 Miles from the site - 37 wells

Water Supply Co	Well #	Well Depth (FT)	Aquifer
Jericho Water Dist	7446	493	Magothy
"	3474	512	"
"	11107	585	"
"	11295	535	"
Old Westbury Village	3475	487	"
"	8658	610	"
"	7549	499	"
Westbury Water Dist	10451	512	"
Carle Place Water Dist.	6315	348	"
"	4706	355	"
"	3457	435	"
"	2748	516	"
Roosevelt Field Water Dist.	9571	603	"
	7957	519	"
	9846	574	"
East Meadow Water Dist	4448	550	"
"	7747	545	"

Nov. 21, 5M

(3)

3 - 4 miles

Water Supply Co	Well #	Well Depth (ft)	Aquifer
East Meadow Water Dist.	3465	580	Magothy
"	5322	510	"
"	5371	509	"
Levittown Water Dist.	5302	484	"
"	7580	357	"
"	4450	466	"
"	7523	684	"
"	8279	547	"
"	7076	674	"
"	3618	418	"
Bethpage Water Dist.	3876	386	"
"	8941	770	"
"	9591	682	"
"	8767	640	"
"	8768	678	"
"	6078	275	"
Plainview Water Dist.	4095	490	"
"	4096	494	"
"	6076	358	"
"	6077	460	"

WATER COMPANY	TOTAL POPULATION	÷	# OF WELLS		POPULATION SERVED PER WELL
÷Old Westbury Village	3,200	÷	5	=	640
Bowling Green Water District	12,000	÷	2	=	6,000
Bethpage Water District	33,000	÷	9	=	3,666
Carte Place Water District	10,000	÷	5	=	2,000
Hicksville Water District	47,810	÷	20	=	2,391
Jericho Water District	58,000	÷	22	=	2,636
Levitown Water District	50,000	÷	12	=	4,167
Plainview Water District	35,000	÷	11	=	3,182
Roosevelt Field Water District	1,900	÷	5	=	380
East Meadow Water District	50,000	÷	11	=	4,545

Ref 21
7 of 9

MUNICIPAL WELLS

0 to 0.5 miles from site

0 Wells

0.5 to 1 mile from site (6 wells)

Westbury Water District:	2 wells x 1,823 =	3,646
Hicksville Water District:	3 wells x 2,391=	7,173
Jericho Water District:	1 well x 2,636=	2,636
		13,454

1 to 2 miles from the site (23 wells)

Old Westbury Village:	1 well x 640=	640
Westbury Water District:	4 wells x 1,873=	7,292
Bowling Green Water:	2 wells x 6,000=	12,000
Hicksville Water District:	14 wells x 2,391=	33,474
Levittown Water District:	1 well x 4,167=	4,167
Jericho Water District:	1 well x 2,636=	2,636
		60,209

2 to 3 miles from the site (14 wells)

Westbury Water District:	4 wells x 1,823=	7,290
Levittown Water District:	2 wells x 4,167=	8,334
Hicksville Water District:	3 wells x 2,391=	7,173
Plainview Water District:	2 wells x 3,182=	6,364
Jericho Water District:	3 wells x 2,636=	7,908
		37,071

3 to 4 miles from the site (37 wells)

Jericho Water District:	4 wells x 2,636=	10,544
Old Westbury Village:	3 wells x 640=	1,920
Westbury Water District:	1 well x 1,823=	1,823
Carle Place Water District:	4 wells x 2,000=	8,000
Roosevelt Field Water:	3 wells x 380=	1,140
East Meadow Water Dist:	5 wells x 4,545=	22,725
Levittown Water District:	7 wells x 4,167=	29,169
Bethpage Water District:	6 wells x 3,666=	21,996
Plainview Water District:	4 wells x 3,182=	12,728
		108,222

<u>2 to 3 miles from the site (14 wells)</u>

Westbury Water District:	4 wells x 1,823=	7,290
Levittown Water District:	2 wells x 4,167=	8,334
Hicksville Water District:	3 wells x 2,391=	7,173
Plainview Water District:	2 wells x 3,182=	6,364
Jericho Water District:	3 wells x 2,636=	<u>7,908</u>
		37,071

<u>3 to 4 miles from the site (37 wells)</u>

Jericho Water District:	4 wells x 2,636=	10,544
Old Westbury Village:	3 wells x 640=	1,920
Westbury Water District:	1 well x 1,823=	1,823
Carle Place Water District:	4 wells x 2,000=	8,000
Roosevelt Field Water:	3 wells x 380=	1,140
East Meadow Water Dist:	5 wells x 4,545=	22,725
Levittown Water District:	7 wells x 4,167=	29,169
Bethpage Water District:	6 wells x 3,666=	21,996
Plainview Water District:	4 wells x 3,182=	<u>12,728</u>
		<u>108,222</u>

11046/2-91

Ref. 21
9 of 9

RECORD OF TELEPHONE CONVERSATION

DATE 12/18/95

TO A. G. O File
NAME/FILE NO.

FROM Michael Heffron

CLIENT/PROJECT EPA ARCS II

SUBJECT Pumping Rates of Municipal Supply Wells

CHARGE: DEPT. NO. ______ CLIENT SYMBOL ______ OFS NO. ______

DISCUSSION WITH Salvatore Caruso (516) 571-3323
Nassau Co. Dept of Health
Bureau of Water Supply Protection

I asked Mr. Caruso about the pumping capacity of the municipal wells used throughout the county. Mr. Caruso stated that the information previously sent to me for Captains Cove in Glen Cove was typical of the other municipal wells in the county. He explained that the pumping capacities of the municipal wells used throughout the county are similar since they are typically in the same aquifer & constructed the same.

BY [signature] 12/18/95
NAME TITLE DEPT. NO.

CC:

REFERENCE 22

14.22, 1117

Nassau County Department of Health

GROUND WATER AND PUBLIC WATER SUPPLY FACTS

AUGUST 1994

THOMAS S. GULOTTA
COUNTY EXECUTIVE

ABBY J. GREENBERG, M.D.
ACTING COMMISSIONER

Ref. 20, 711

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
FRANKLIN SQUARE W.D.	1	3603	493	Magothy	2a,3a
	2	3604	498	Magothy	2a,3a
	3	3605	438	Magothy	2a,3a,4a
	4	7117	486	Magothy	2a,3a,6b
	5	8818	480	Magothy	2a,3a,6b
FREEPORT (V)	1A	7796	585	Magothy	2a,3a,4a
	2	132	507	Magothy	2a,3a,4a
	3	133	511	Magothy	2a,3a,4a
	4	134	517	Magothy	2a,3a,4a
	5	68	500	Magothy	2a,3a,4a
	6	69	494	Magothy	2a,3a,4a
	7	5695	526	Magothy	2a,3a,4a
	8	5696	518	Magothy	2a,3a,4a
	9	8657	635	Magothy	2a,3a,4a
GARDEN CITY (V)	7	95	534	Magothy	2a,3a
	8	1697	518	Magothy	2a,3a
	9	3881	466	Magothy	2a,3a
	10	3934	417	Magothy	2a,3a,6a
	11	3935	410	Magothy	2a,3a,6a
	12	5163	475	Magothy	2a,3a
	13	7058	440	Magothy	2a,3a,6a
	14	8339	358	Magothy	2a,3a,6a
	15	10033	541	Magothy	2a,3a,4a
	16	10034	570	Magothy	2a,3a,4a
GARDEN CITY PARK W.D.	1	650	346	Magothy	2b,3a
	2	651	340	Magothy	2b,3a
	3	2565	405	Magothy	2b,3a
	4	3672	447	Magothy	2b,3a
	5	3673	429	Magothy	2b,3a
	6	5603	415	Magothy	2a,3a,6a
	7	6945	401	Magothy	2b,3a,6a
	8	7512	375	Magothy	2a,6a
	9	8409	400	Magothy	2b,3a,6a,7a
	10	9768	477	Magothy	2b,3a,6a
	11	10612	400	Magothy	2b,6a
GARDEN CITY SOUTH W.D.	-	-	-	-	0,13b

Reg. 22, 31:T

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
ALBERTSON W.D.	1	3732	350	Magothy	2a,3a
	2	3733	450	Magothy	2a,3a
	3	4327	425	Magothy	2a,3a,6a
	4	5947	365	Magothy	2a,3a,6a
	5	8558	410	Magothy	2a,3a
BAYVILLE (V)	1-1	7620	480	Lloyd	2a,3a
	1-2	7643	218	Magothy	2a,3a
	1-3	8776	459	Lloyd	2b,3a
	2-1	10144	374	Lloyd	2a,3a
BETHPAGE W.D.	5-1	8004	740	Magothy	2a,3a
	6-1	3876	386	Magothy	2a,3a,6a
	6-2	8941	770	Magothy	2a,3a,6a
	7A	8767	640	Magothy	2a,3a
	8A	8768	678	Magothy	2a,3a
	9	6078	275	Magothy	2a,3a
	10	6915	608	Magothy	2a,3a
	11	6916	611	Magothy	2a,3a
	BDG-1	9591	682	Magothy	2a,3a
BOWLING GREEN W.D.	1	8956	530	Magothy	1a,3b,6b
	2	8957	584	Magothy	1a,3b,6b
CARLE PLACE W.D.	1	2747	328	Magothy	2a,3a,5
	2	2748	510	Magothy	2a,3a,5
	3	4206	355	Magothy	2a,3a,5
	4	6315	348	Magothy	2a,3a,5
	5	8457	435	Magothy	2a,3a,5
DEFOREST DRIVE ASSOC W.S.	1	6953	153	Magothy	1a
EAST MEADOW W.D.	1	3456	555	Magothy	1a,3b
	2	3457	320	Magothy	1a,3b
	3	3465	580	Magothy	1a,3b
	4	4447	330	Magothy	1a,3b
	5	4448	550	Magothy	1a,3b
	6	5318	633	Magothy	1a,3b
	7	5319	438	Magothy	1a,3b
	8	5320	643	Magothy	1a,3b
	9	5321	509	Magothy	1a,3b
	10	5322	510	Magothy	1a,3b
	11	7797	545	Magothy	1a,3b
EAST W[illegible]TON (V)	-	-			2a,13a
FARMIN[illegible]LE (V)	1-3	7852	450	Magothy	2a,3a,4a
	2-1	1937	146	Magothy	2a,3b,4a
	2-2	6644	222	Magothy	2a,3a,4a
	2-3	11004	510	Magothy	2a,3a,4a

Reg. 22, 71:7

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
GLEN COVE, CITY of	Morgan	835	300	Lloyd	2a,3a
	Roxbury	5762	280	Magothy	2a,3a
	1S	3892	246	Magothy	2a,3a
	2S	5261	230	Magothy	2a,3a
	21	8326	165	Magothy	2a,3a
	30	9210	275	Magothy	2a,3a
	31	9211	269	Magothy	2a,3a
	Kelly	9334	298	Magothy	2a,3a,6a
GLENWOOD W.D.	-	-	-	-	2a,13c
GREAT NECK NORTH, W.A. of	1	30	203	Port Wash	1b,3a,4a
	2	22	145	Magothy	1a,3a
	4	31	229	Port Wash	1a,3a,4a
	5	687	309	Lloyd	1a,3a
	6	1298	336	Lloyd	1a,3a
	7	2214	286	Lloyd	1a,3a
	8	3443	464	Lloyd	1a,3a
	9	4388	145	Magothy	1a,3a,4a,6a
	10	5884	163	Magothy	1a,3a,4a
	11	8342	434	Lloyd	1a,3a
	21A	700	70	Glacial	1a,3a,6a
HEMPSTEAD (V)	1R	4425	365	Magothy	1b,3a,4a,6a
	2	79	428	Magothy	1b,3a,4a,8b
	3	80	478	Magothy	1b,3a,4a,8b
	4	81	420	Magothy	1b,3a,4a,8b
	5	82	542	Magothy	1b,3a,4a,8b
	6	83	403	Magothy	1b,3a,4a,6a,8b
	7	3668	500	Magothy	1b,3a,4a
	8	7298	444	Magothy	1b,3a,4a,8b
	9	8264	510	Magothy	1b,3a,4a
HICKSVILLE W.D.	1-4	7562	545	Magothy	1b,3a,6a
	1-5	8249	490	Magothy	1b,3a,6a
	1-6	9488	575	Magothy	1b,3a,6a
	2-2	5336	523	Magothy	1a,3a
	3-2	8525	503	Magothy	1a,3a
	4-2	8526	601	Magothy	1a,3a,6b
	5-2	7561	550	Magothy	1b,3a,6b
	5-3	9212	604	Magothy	1b,3a
	6-1	3953	419	Magothy	1a,3a
	6-2	3878	428	Magothy	1a,3a
	7-1	6190	600	Magothy	1b,3a
	7-2	6191	550	Magothy	1b,3a
	8-1	6192	626	Magothy	1a,3a,6a,11a
	8-2	6193	467	Magothy	1a,3a
	8-3	9180	630	Magothy	1a,3a,6a,11a
	9-1	8778	590	Magothy	1b,3a
	9-2	8779	585	Magothy	1b,3a
	9-3	10208	649	Magothy	1b,3a
	10-1	9463	638	Magothy	1b,3a
	11-1	10555	700	Magothy	1a,3a

Ref. 22 ; 5/17

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
JAMAICA W.S. CO.	9	14	110	Glacial	1a,3a,3c,5
	15A	9151	420	Magothy	1a,3a,3c,5
	15B	11037	420	Magothy	1a,3a,3c,5
	15C	10206	440	Magothy	1a,3a,3c,5
	15D	693	93	Glacial	1a,3a,3c,5
	15E	10207	450	Magothy	1a,3a,3c,5
	16A	1958	722	Lloyd	1a,3a,3c,5
	20	17	465	Magothy	1a,3a,3c,5,6a
	25A	7482	435	Magothy	1a,3a,4f,5
	28	2414	88	Glacial	1a,3a,3c,5
	28A	11647	499	Magothy	1a,3a,4f,5
	28B	10211	494	Magothy	1a,3a,4f,5
	30	3720	517	Magothy	1a,3a,4f,5
	34	4512	505	Magothy	1a,3a,4f,5
	35	4077	150	Glacial	1a,3a,3c,5,6a
	35A	4298	395	Magothy	1a,3a,3c,5,6a
	40	4390	296	Magothy	1a,3a,3c,5,6a
	40A	7445	448	Magothy	1a,3a,3c,5,6a
	44	5155	90	Glacial	1a,3a,3c,5,6a
	44A	5156	331	Magothy	1a,3a,3c,5,6a
	44B	6744	94	Glacial	1a,3a,3c,5,6a
	44C	6745	344	Magothy	1a,3a,3c,5,6a
	57	7649	340	Magothy	1a,3a,3c,5,6a
	57A	7650	440	Magothy	1a,3a,3c,5,6a
JERICHO W.D.	3	198	617	Magothy	2a,3a
	4	199	600	Magothy	2a,3a
	5	570	600	Magothy	2a,3a
	6	3474	512	Magothy	2a,3a
	7	3475	482	Magothy	2a,3a
	9	4245	565	Magothy	2a,3a
	11	5201	504	Lloyd	2a,3a
	12	6092	631	Magothy	2a,3a
	13	6093	606	Magothy	2a,3a
	14	6651	610	Magothy	2a,3a
	15	7030	530	Magothy	2a,3a
	16	7446	493	Magothy	2a,3a
	17	7593	468	Magothy	2a,3a
	18	7772	563	Magothy	2a,3a
	19	7773	560	Magothy	2a,3a
	20	10149	625	Magothy	2a,3a
	22	7781	454	Magothy	2a,3a
	23	8043	688	Magothy	2a,3a
	25	8355	590	Magothy	2a,3a
	27	8713	372	Magothy	2a,3a
	29	11107	585	Magothy	2a,3a
	30	11295	535	Magothy	2a,3a

Ref. 22, 0117

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
LEVITTOWN W.D.	2A	8321	674	Magothy	1a,3a
	3	2580	357	Magothy	1a,3a
	5A	7076	674	Magothy	1a,3b
	6A	3618	418	Magothy	1a,3b
	7A	8279	547	Magothy	1a,3b
	8A	7523 7[illegible]	684	Magothy	1a,3b
	9	4450 [illegible]	466	Magothy	1a,3b
	10	4451	403	Magothy	1a,3b
	11	5301	377	Magothy	1a,3b
	12	5302	484	Magothy	1a,3b
	13	5303	506	Magothy	1a,3b
	14	5304	467	Magothy	1a,3b
LIDO-POINT LOOKOUT W.D.	1	46	1260	Lloyd	1a,3b,8a,8b
	2	5227	1260	Lloyd	1a,3b,8a,8b
	3	8354	1270	Lloyd	1a,3a,8a,8b,12b
LOCUST VALLEY W.D.	4	118	471	Lloyd	2a,3a
	5	119	571	Lloyd	2a,3a
	6	1651	465	Lloyd	2a,3a
	7	5152	355	Lloyd	2a,3a
	8	7665	370	Magothy	2a,3a
LONG BEACH, CITY of	9	2597	1235	Lloyd	1b,3b,8a,8b,8c,8d,12c
	10	3687	1245	Lloyd	1b,3b,8a,8b,8c,8d,12c
	11	5308	1220	Lloyd	1b,3b,8a,8b,8c,8d,12c
	12	6450	1275	Lloyd	1b,3b,8a,8b,8c,8d,12c
	13	7776	1233	Lloyd	1b,3b,8a,8b,8c,8d,12c
	14	8011	1265	Lloyd	1b,3b,8a,8b,8c,8d,12c
	15	8233	1226	Lloyd	1b,3b,8a,8b,8c,8d,12c
	16	8557	1253	Lloyd	1b,3b,8a,8b,8c,8d,12c
L.I. WATER CORPORATION	1-13	1601	600	Magothy	1b,3b,4e
	1-15	3722	81	Glacial	1b,3b,4e
	1-16	3832	95	Glacial	1b,3b,4e
	1-17	6893	560	Magothy	1b,3b,4e
	2-1	1602	500	Magothy	1b,3b,4e
	3-1	1603	529	Magothy	1b,3b,4e
	3-2	3520	178	Magothy	1b,3b,4e
	4-1	1402	35	Glacial	1b,3b,4e
	4-16	2613	500	Magothy	1b,3b,4e
	4-17	8196	620	Magothy	1b,3b,4e
	5(CS)	1346	160	Glacial	1b,3b,4e,6a,8a,8b,9a
	6-1	4405	1075	Lloyd	1b,3b,8a,8b

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
L.I. WATER CORPORATION	7-1A	9613	480	Magothy	1b,3b,4e,8a,8b
(Continued)	7-2	2578	317	Magothy	1b,3b,4e,8a,8b
	7-3	5145	460	Magothy	1b,3b,4e,8a,8b
	8-1	3937	462	Magothy	1b,3b,4e
	8-2	4394	180	Magothy	1b,3b,4e
	9-1	8420	420	Magothy	1b,3b,4e
	9-2A	10286	535	Magothy	1b,3b,4e
	10-1	4393	472	Magothy	1b,3b,4e
	12-1	4132	607	Magothy	1b,3b,4e
	12-2	5153	323	Magothy	1b,3b,4e
	14-1	4411	550	Magothy	1b,3b,4e
	15-1	5121	542	Magothy	1b,3b,4e
	15-2	8251	495	Magothy	1b,3b,4e
	16-1	5187	503	Magothy	1b,3b,4e
	17-1	5656	495	Magothy	1b,3b,4e
	17-2	7521	555	Magothy	1b,3b,4e
	18-1	5653	589	Magothy	1b,3b,4e
	18-2	8250	480	Magothy	1b,3b,4e
	19-1	6146	498	Magothy	1b,3b,4e
	19-2	7522	555	Magothy	1b,3b,4e
	20-1	7548	511	Magothy	1b,3b,4e
	22-1	7831	585	Magothy	1b,3b,4e
	23-1	7855	600	Magothy	1b,3b,4e
	23-2	10103	518	Magothy	1b,3b,4e
	24-1	8195	507	Magothy	1b,3b,4e
	24-2	8979	435	Magothy	1b,3b,4e
MANHASSET-LAKEVILLE W.D.					
CUMBERLAND	1	5099	393	Magothy	2a,3a
EAST SHORE ROAD	S	7747	138	Glacial	1a,3a
	D	9308	410	Lloyd	2a,3a
EXPRESSWAY	6	5710	385	Magothy	2a,3a,6a
LAKEVILLE ROAD	7	1802	691	Lloyd	2a,3a,6b
MUNSEY PARK	8	3523	320	Magothy	2a,3a
PARKWAY #1	12	3905	254	Magothy	1a,3a,6a
#2	4T	4243	255	Magothy	1a,3a,6a
SHELTER ROCK ROAD #1	21	1328	742	Lloyd	2a,3a
#2	25	10557	408	Magothy	2a,3a
VALLEY ROAD	22	1618	550	Lloyd	2a,3a,6b
EDEN WELL	23	7651	405	Magothy	2a,3a
CAMPBELL #1	1T	7126	458	Magothy	1a,3a
#2	3T	7892	451	Magothy	1a,3a
SEARINGTOWN ROAD #1	5T	2028	485	Magothy	1a,3a
# 2	6T	5528	490	Magothy	1a,3a
SPRUCE POND	26	10889	452	Magothy	2a,3a
GRACEFIELD	27	11509	489	Magothy	2a,3a

Kly. 22, 0117

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
MASSAPEQUA W.D.	1	4602	444	Magothy	1a,3a,4c,10a
	2R	9173	850	Magothy	1a,3a,4c,10a
	3	5703	459	Magothy	1a,3a,4c,10a
	4	6442	612	Magothy	1a,3a,4c,10a
	5	6443	268	Magothy	1a,3a,4c,10a
	6	6866	626	Magothy	1a,3a,4c,10a
	7	6867	492	Magothy	1a,3a,4c,10a
	8	8214	686	Magothy	1a,3a,4c,10a
MILL NECK ESTATES W.S.	1	6042	340	Lloyd	1a
	2	8426	360	Lloyd	1a
MINEOLA (V)	1	97	355	Magothy	2a,3a
	3	578	407	Magothy	2a,3a
	4	3185	463	Magothy	2b,3a,6a
	5	4082	462	Magothy	2a,3a
	6	5596	468	Magothy	2a,3a
	7	8576	505	Magothy	2a,3a
N.Y. WATER SERVICE CORP					
NEWBRIDGE ROAD	1N	3895	349	Magothy	1a,3a,4a,10a
	3N	8976	700	Magothy	1a,3a,4a,10a
	4N	9878	664	Magothy	1a,3a,4a,10a
SEAMANS NECK ROAD	2S	3893	151	Magothy	1a,3a,4a,10a
	3S	8480	656	Magothy	1a,3a,4a,10a
	4S	9338	649	Magothy	1a,3a,4a,10a
JERUSALEM AVE	4J	9514	660	Magothy	1a,3a,4a,10a
	5J	10195	585	Magothy	1a,3a,4a,10a
CHARLES ST	2C	9976	567	Magothy	1a,3a,4a,10a
JEFFERSON ST	11J	7407	645	Magothy	1a,3a,4a,10a
	12J	8253	597	Magothy	1a,3a,4a,10a
DE MOTT AVE	4D	5767	384	Magothy	1a,3a,4a,10a
	5D	8837	681	Magothy	1a,3a,4a,10a
	6D	9910	774	Magothy	1a,3a,4a,10a
MASSAPEQUA	6M	7414	530	Magothy	1a,3a,4a,10a
	7M	8603	893	Magothy	1a,3a,4a,10a
	8M	10863	685	Magothy	1a,3a,4a,10a
OLD MILL ROAD	1O	8031	509	Magothy	1a,3a,4a,10a
N/E FARMINGDALE W.D.	-	-	-	-	0,13d
NO SHORE UNIV HOSPITAL @ GC	1	5994	226	Glacial	1a,3a
OLD WESTBURY (V)	1	152	478	Magothy	2a
	2A	7513	470	Magothy	2a,3a
	3R	11909	506	Magothy	2a,3a
	4	7549	499	Magothy	2a,3a
	5	8658	610	Magothy	2a,3a

Ref. 22 ; 4117

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
OYSTER BAY W.D.	PLT 1	585	77	Glacial	1a,3a
	PLT 2	4400	302	Magothy	2a,3a
	6-1	8183	477	Magothy	2a,3a
	6-2	9520	512	Magothy	2a,3a
PLAINVIEW W.D.	1-1	4095	490	Magothy	1a,3b
	1-2	4096	494	Magothy	1a,3b
	2-1	7526	688	Magothy	1a,3b
	3-1	4097	465	Magothy	1a,3b
	3-2	6580	596	Magothy	1a,3b
	4-1	6076	358	Magothy	1a,3b
	4-2	6077	460	Magothy	1a,3b
	5-1	6956	597	Magothy	1a,3b,6a
	5-2	7421	559	Magothy	1a,3b,6a
	5-3	8054	580	Magothy	1a,3b
	5-4	8595	610	Magothy	1a,3b
PLANDOME (V)	1	28	136	Glacial	2a
	2	29	207	Glacial	2a
	3	3540	207	Glacial	2a
PORT WASHINGTON W.D.					
NEULIST AVE	1N	1715	480	Lloyd	1a,3a,4a
	2N	1716	475	Lloyd	1a,3a,4a
	3N	2030	215	Magothy	1a,3a,4a
HEWLETT	4H	2052	325	Magothy	2a,3a,4a,6b
SOUTHPORT	5S	4223	326	Magothy	1a,4a
BAR BEACH	6B	5209	300	Magothy	1a
RICKS	7R	5876	238	Magothy	1a,3a,4a
MORLEY PARK	8M	7551	469	Magothy	2a,4a,6b
	9M	7552	454	Magothy	2a,4a,6b
SANDY HOLLOW RD	1SH	4860	89	Glacial	1a,4a,6b
	2SH	6087	92	Glacial	1a,4a,6b
	3SH	4859	385	Lloyd	1a,4a
STONYTOWN RD	10ST	9809	524	Port Wash	1a,3a,4a
ROCKVILLE CENTRE (V)	3	50	513	Magothy	1a,3b,4g,8b
	4	9792	537	Magothy	1a,3b,4g,8b
	5	72	604	Magothy	1a,3b,4g,8b
	6	3745	592	Magothy	1a,3b,4g,8b
	7	5193	550	Magothy	1a,3b,4g,8b
	8	5194	515	Magothy	1a,3b,4g,8b
	9	5195	505	Magothy	1a,3b,4g,8b
	10	6817	558	Magothy	1a,3b,4g,8b
	11	8216	660	Magothy	1a,3b,4g,8b
	12	8217	503	Magothy	1a,3b,4g,8b
	13	8218	460	Magothy	1a,3b,4g,8b

NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
ROOSEVELT FIELD W.D.	1	5484	575	Magothy	1a,3b
	2	5485	557	Magothy	1a,3b
	5	7957	519	Magothy	1a,3a
	7	9521	603	Magothy	1a,3a
	10	9846	594	Magothy	1a,3b
ROSLYN W.D.	1-8	1870	260	Magothy	1a
	2	2400	439	Magothy	2a,3a
	3	4265	485	Magothy	2a
	4	4623	498	Magithy	2a,3a
	5	5852	482	Magothy	2a,3a
	6	7104	431	Magothy	2a,3a
	7	7873	530	Magothy	2a,3a
	8	8010	[illegible]48	Magothy	2a,3a
SAGAMORE HILL N.H.S.	1	9068	170	Glacial	1a
	1R	9076	200	Glacial	1a
	2	570	150	Glacial	1a
SANDS POINT (V)	1	36	214	Port Wash	2a,3a
	2	37	140	Glacial	2a,3a
	3	4389	225	Magothy	2a,3a
	4	7157	240	Magothy	2a,3a
	5	8183	165	Glacial	2a,3a
	6	9446	368	Lloyd	2a,3a
SEA CLIFF WATER CO	GH	5792	295	Magothy	1a,3a,4d
	SC	7857	614	Lloyd	1a,3a,4d
	D	901	68	Glacial	1a,4d
SOUTH FARMINGDALE W.D.	1-2	4043	374	Magothy	1a,3b,4b
	1-3	5148	369	Magothy	1a,3b,4b
	1-4	7377	758	Magothy	1a,3b,4b
	2-1	5147	219	Magothy	1a,3b,4b,8a,8b
	2-2	6149	640	Magothy	1a,3b,4b,8a,8b
	3-1	6150	612	Magothy	1a,3b,4b
	4-1	6148	566	Magothy	1a,3b,4b
	5-1	7515	347	Magothy	1a,3b,4b
	5-2	7516	584	Magothy	1a,3b,4b
	6-1	8664	610	Magothy	1a,3b,4b
	6-2	8665	580	Magothy	1a,3b,4b
SPLITROCK W.S.	1	UNK 2	-	Lloyd	2a
SWAN COVE W.S.	1	2920	515	Lloyd	1a

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NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEMS
DEPTH, AQUIFER AND TREATMENT PROVIDED BY WELL

December, 1993

WATER SYSTEM	LOCAL WELL NO.	NYSDEC WELL NO.	DEPTH (ft)	AQUIFER	TREATMENT
UNIONDALE W.D.	1	4756	313	Magothy	1a,3b
	2	4757	628	Magothy	1a,3b
	3	4758	625	Magothy	1a,3b
	4	4759	625	Magothy	1a,3b
	5	8474	556	Magothy	1a,3a
	6	8475	481	Magothy	1a,3a
WESTBURY W.D.	6	101	341	Magothy	2a,3a
	7A	7785	400	Magothy	2a,3a
	9	2602	800	Lloyd	2a,3a
	10	5007	494	Magothy	2a,3a
	11	5654	538	Magothy	2a,3a
	12	5655	255	Magothy	2a,3a
	12A	6819	265	Magothy	2a,3a
	14	7353	390	Magothy	2a,3a
	15	8007	564	Magothy	2a,3a
	16	8497	539	Magothy	2a,3a
	17	10451	512	Magothy	2a,3a
WEST HEMP-HEMP GARDENS W.D.	1	75	181	Magothy	1a,3a,4c,10b
	2	76	193	Magothy	1a,3a,4c
	2A	9452	595	Magothy	1a,3a,4c
	3	2239	178	Magothy	1a,3a,4c,10b
	4	3704	159	Magothy	1a,3a,4c,10b
	5	4118	204	Magothy	1a,3a,4c,10b
	6	5260	514	Magothy	1b,3a,4c
	7	7720	506	Magothy	1b,3a,4c,10b
	9	10408	615	Magothy	1a,3a,4c,10b
	10	10401	625	Magothy	1a,3a,4c,10b
WILLISTON PK (V)	1	103	380	Magothy	2a,3a
	2	104	376	Magothy	2a,3a
	3	2487	338	Magothy	2a,3a
	4	8248	400	Magothy	2a,3a,6a

SOURCES:

(1)Public Water Supply Annual Inspection Reports, NCDH, 1993.

(2) NCDH records

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NASSAU COUNTY DEPARTMENT OF HEALTH

COMMUNITY PUBLIC WATER SYSTEM ESTIMATED POPULATION, ANNUAL PUMPAGE AND PER CAPITA DAILY CONSUMPTION IN 1993 NASSAU COUNTY, NEW YORK

WATER SYSTEM	ESTIMATED POPULATION (a)	ANNUAL PUMPAGE (Galx1000) (b)	IMPORTED OR (EXPORTED) (Galx1000) (c)	GALLONS PER CAPITA DAY (GPCD)
ALBERTSON WD	13,500	768,781		156
BAYVILLE (V)	8,800	339,700		106
BETHPAGE WD	33,000	1,449,028		120
BOWLING GREEN WD	12,000	211,506		48
CARLE PLACE WD	10,000	539,044		148
GREAT NECK NO, WA of	31,401	1,674,222		146
DEFOREST DR ASSOC	21	(d)		(d)
EAST MEADOW WD	50,000	2,527,096		138
EAST WILLISTON (V)	2,600	0	113,300	119
FARMINGDALE (V)	7,868	407,709		142
FRANKLIN SQUARE WD	20,000	752,136		103
FREEPORT (V)	40,000	1,788,688		123
GARDEN CITY PARK WD	21,000	1,354,014		177
GARDEN CITY SOUTH WD	1,500	0	(d)	(d)
GARDEN CITY (V)	23,000	1,495,830		178
GLEN COVE CITY	28,000	1,573,383		154
NO SHORE UNIV HOSP @ GC	1,400		TRANSIENT POPULATION	(e)
GLENWOOD WD	640	0	62,254	266
HEMPSTEAD (V)	50,558	2,373,416		129
HICKSVILLE WD	47,810	2,629,305		151
JAMAICA WS CO	130,000	3,665,600		77
JERICHO WD	58,000	4,645,612		219
LEVITTOWN WD	50,000	1,897,375		104
LIDO-PT LOOKOUT WD	4,500	397,128		242
LOCUST VALLEY WD	7,500	612,568		224
LONG BEACH CITY	35,000	1,466,139		115
LONG IS WATER CORP	237,550	10,705,886		123
MANHASSET-LAKEV WD	43,000	2,480,370	(126,088)	150
MASSAPEQUA WD	46,000	1,948,484		116
MILL NECK EST WS	240	(d)		(d)
MINEOLA (V)	22,000	1,075,639		134
N/E FARMINGDALE WD	300	INCLUDED IN VILLAGE OF F[illegible]NGDALE		
NY WATER SERVICE CORP	170,000	5,843,480		94
OLD WESTBURY (V)	3,200	633,794		543
OYSTER BAY WD	8,360	429,930		141
PLAINVIEW WD	35,000	1,817,016		142
PLANDOME (V)	1,600	79,010	6,638	147
PORT WASHINGTON WD	34,000	1,400,680	119,450	122
ROCKVILLE CENTRE (V)	28,000	1,546,014		151
ROOSEVELT FIELD WD	1,900	1,149,689		(f)
ROSLYN WD	28,000	1,259,182	(62,254)	117
SAGAMORE HILL N.H.S.	12	(d)		
SANDS POINT (V)	2,795	327,530		321
SEA CLIFF WATER CO	17,850	489,300		75
SWAN COVE WS	51	(d)		(d)
SO FARMINGDALE WD	44,700	1,740,298		107
SPLIT ROCK WS	25	(d)		(d)
UNIONDALE WD	23,000	798,250		95
WESTBURY WD	20,050	1,091,528		149
WEST HEMPSTEAD WD	32,031	1,118,873		96
WILLISTON PARK (V)	7,474	495,590	(113,300)	140
TOTAL	1,495,236	68,998,823		126

(a) Community Water System Sampling Site Plans, 1991.

(b) Total pumpage from NYSDEC.

(c) Reported by public water systems in Annual Water Supply Statements or monthly operation reports for 1993.

(d) Not Available

(e) Not Applicable

(f) Not Applicable. Transient Population; water used mainly for cooling and industrial use.

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NASSAU COUNTY DEPARTMENT OF HEALTH

ABANDONED PUBLIC SUPPLY WELLS IN NASSAU COUNTY

1950 - 1993

	NYSDEC WELL NO	WATER SYSTEM	WELL No.	DATE DRILLED	DEPTH (FT)	DATE ABANDONED	REASON (c)
1	3142	Bethpage	4	1949	163	1958	Pulled Sand
2	3147	"	5	1949	233	1959	Pulled Sand
3	4063	"	7	1952	233	1971	NO3
4	4146	"	8	1956	212	1971	NO3
5	23	Great Neck N.W A	3A	1937	434	1962	Capacity
6	706	Farmingdale	1-2	1936	70	1967	NO3, Fe, Mn
7	131	Freeport	1	1929	523	1955	Capacity
8	361	Garden City	1	-	40	1956	Capacity
9	91	"	2	1911	82	1965	Capacity
10	92	"	5	1926	77	1959	Capacity
11	94	"	6	1931	382	1989	Casing, Organics
12	112	Glen Cove	1	1950	150	1968 (a)	Capacity
	802-818	"	2-18	1950	42-169	1968 (a)	Capacity
13	3466	"	20	1950	177	1989	Organics
14	8327	"	22	1965	168	1989	Organics
15	78	Hempstead	1	1927	376	1954	Capacity
16	148	Hicksville	2-1	1941	153	1967	Capacity
17	149	"	1-1	1941	127	1967	Capacity
18	150	"	1-2	1941	144	1953	Capacity
19	2072	"	1-3	1946	159	1967	Capacity
20	3488	"	3-1	1951	168	1980	NO3
21	3552	"	4-1	1951	169	1978	NO3
22	3553	"	5-1	1951	152	1980	Organics, NO3
23	10	Jamaica	15	1927	399	1968	Screen
24	11	"	15A	1927	408	1977	Screen
25	13	"	15C	1927	287	1985	Capacity
26	12	"	15B	1927	423	1985	Capacity
27	15	"	16	1928	102	1986	Organics
28	2115	"	25	1947	84	1990	Organics
29	2413	"	28A	1949	514	1990	Mechanical
30	4133	Jericho	8	1954	455	1980	Taste & Odor
31	4246	"	10	1954	458	1980	Organics
32	2402	Levittown	1	1952	208	1976	NO3
33	2403	"	2	1947	84	1966	NO3
34	2581	"	4	1948	80	1965	NO3, T & O
35	3193	"	5	1949	320	1960	Pulled Sand
36	3312	"	8	1950	307	1963	Pulled Sand
37	3313	"	7	1950	95	1966	NO3
38	3194	"	6	1949	256	1986	NO3
39	115	Locust Valley	1	1925	416	1970	Capacity

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NASSAU COUNTY DEPARTMENT OF HEALTH

ABANDONED PUBLIC SUPPLY WELLS IN NASSAU COUNTY
1950 - 1993

	NYSDEC WELL NO	WATER SYSTEM	WELL No.	DATE DRILLED	DEPTH (FT)	DATE ABANDONED	REASON (c)
40	41	Long Beach	3	1937	1255	1968	Casing
41	42	"	4	1929	1184	1957	Casing
42	43	"	5	1929	1263	1965	Casing
43	44	"	6	1929	1265	1970	Casing
44	1927	"	8	1943	1230	1965	Casing
45	3448	"	7	1950	1230	1972	Casing
46	3327	LIWC	7-1	1950	451	1979	Capacity
47	3782	"	9-1	1952	408	1967	Casing
48	3781	"	9-2	1951	430	1985	Casing
49	24	Man-Lakeville	5	1932	428	1982	Capacity
50	4603	Massapequa	2	1954	184	1977	Capacity,Sand,Fe
51	98	Mineola	2	1927	367	1981	Capacity
52	580	NYWS	5J	1938	45	1967	MBAS, Mn
53	634	"	6J	1938	45	1967	MBAS, Mn
54	728	"	1M	1928	40	1964	MBAS, Mn
55	729	"	2M	1936	73	1966	MBAS, Mn
56	2577	"	7J	1949	45	1967	MBAS, Mn
57	2603	"	3M	1949	72	1964	MBAS, Mn
58	3186	"	8J	1950	42	1967	MBAS, Mn
59	3187	"	9J	1950	41	1967	MBAS, Mn
60	3437	"	10J	1950	45	1967	MBAS, Mn
61	3564	"	2D	1952	69	1972	NO3, MBAS, Mn
62	3780	"	1S	1952	142	1978	NO3, Mn
63	3886	"	4M	1953	69	1964	MBAS, Mn
64	5848	"	5M	1956	332	1971	Fe
65	8672	"	3J	1971	570	1979	Capacity
66	5259	"	2N	1955	317	1982	Capacity
67	3463	"	1J	1950	306	1983	Capacity
68	3680	"	2J	1951	332	1983	Capacity
69	3894	"	1C	1953	362	1983	Capacity
70	3427	"	1D	1950	169	1983	Capacity
71	4461	"	3D	1954	176	1983	Capacity
72	105	Old Westbury	2	1935	472	1963	Capacity
73	48	RVC	1	1927	520	1955	Capacity
74	49	"	2	1927	330	1954	Capacity
75	52	"	4	1931	534	1975	Casing
76	5484	Roosevelt Field	1	1956	575	1991	Organics
77	5485	"	2	1956	557	1991	Organics, NO3
78	5486	"	3	1973	559	1980	Organics
79	6046	"	4	1964	175	1992	NO3
80	4042	So. Farmingdale	1-1	1954	150	1982	Screen Collapse
81	827	Westbury	3	-	240	1964	Capacity
82	828	"	4	-	350	1964	Capacity

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NASSAU COUNTY DEPARTMENT OF HEALTH

ABANDONED PUBLIC SUPPLY WELLS IN NASSAU COUNTY

1950 - 1993

	NYSDEC WELL NO	WATER SYSTEM	WELL No.	DATE DRILLED	DEPTH (FT)	DATE ABANDONED	REASON (c)
83	829	Westbury (cont'd)	5	1950	252	1964	Capacity
84	1667	"	7	1941	237	1964	Capacity
85	2236	"	8	1947	570	1967	Pulled Sand
86	1658	Grumman Corp.	1	1941	112	1972	Capacity
87	1665	"	2	1941	101	1962	NO3, NH3
88	1666	"	3	1941	99	1962	NO3, NH3
89	1923	"	4	1943	359	1977 (b)	Organics
90	1960	"	5	1944	160	1964	Capacity, Sand
91	1963	"	6	1944	105	19[illegible]	Capacity, Sand
92	1797	"	7	1942	94	19[illegible]	Capacity, Sand
93	1911	"	8	1943	163	1964	Capacity, Sand
94	1798	"	9	1941	105	1964	Capacity, Sand
95	1912	"	10	1943	143	1964	Capacity, Sand
96	1859	"	11	1942	164	1964	Cr+6, Capacity
97	1961	"	12	1944	274	1964	Capacity
98	4708	"	A	1954	169	1969	Taste & Odor
99	5305	"	13	1955	256	1969	NO3
100	1922	"	14	1943	151	1970	Capacity
101	5306	"	15	1955	167	1972	Capacity
102	8124	"	3	1966	543	1977 (b)	Organics
103	7635	"	5	1964	394	1977 (b)	Organics
104	7534	"	6	1964	366	1977 (b)	NO3
105	7535	"	8	1964	357	1977 (b)	Organics, NO3
106	8842	"	1	1972	570	1977 (b)	Organics
107	7636	"	10	1964	373	1977 (b)	Organics, NO3
108	7637	"	11	1964	490	1977 (b)	Organics
109	8643	"	14	1970	467	1977 (b)	Organics
110	8816	"	15	1972	500	1977 (b)	Organics
111	7744	Plattdeutsche	1	1965	70	1977 (b)	Cr+6, NO3
112	8623	Am Impr Prod	1	1966	93	1977 (b)	Organics
113	2316	Pall Corp	1	1946	190	1977 (b)	Organics
114	7664	Engineers CC	2	1965	80	1978 (b)	Organics
115	6576	Aug. Thomsen	1	1958	146	1977 (b)	Organics
116	7847	Camp Bauman	1	1965	40	1980	NO3
117	157	AHRC	1	1932	360	1978	Bacteria
118	4410	HO Penn	1	1954	115	1979	Copper

SOURCE: NCDH records.

(a) Common suction system - treated as one well.

(b) Well abandoned as a drinking supply; used for non-drinking purposes.

(c) Cr+6 - Chromates; Mn - Manganese; Fe - Iron; NH3 - Ammonia; H2S - Hydrogen Sulfide; NO3 - Nitrates; MBAS - Detergents; T & O - Taste and Odor

Ky. 22, 16117

NASSAU COUNTY DEPARTMENT OF HEALTH

RESTRICTED PUBLIC SUPPLY WELLS IN NASSAU COUNTY
INORGANIC CHEMICALS

1993

WATER SYSTEM	NYSDEC WELL NO. (a)	WATER SYSTEM NO.	DEPTH (ft.)	DATE RESTRICTED	CHEMICAL	STATUS
Albertson W.D.	None					
Bayville Village	7643	1-2	218	1967	Nitrate	Not Used
Bethpage W.D.	6078	9	275	1971	Nitrate	Blended
Bowling Green W.D.	None					
Carle Place W.D.	2747	1	328	1969	Nitrate	Not Used
Deforest Dr. Assoc W.S.	None					
East Meadow W.D.	4447	4	330	09/20/78	Nitrate	Not Used
	3457	2	320	06/02/83	Nitrate	Not Used
	3456	1	555	11/28/89	Nitrate	Not Used
Farmingdale Vill.	None					
Franklin Square W.D.	None					
Freeport Village	None					
Garden City Park W.D.	2565	3	405	1966	Nitrate	Not Used
	8409	9	400	1969	Nitrate	Treated
	651	2	340	1970	Nitrate	Blended
	3673	5	429	1970	Nitrate	Not Used
	650	1	346	[illegible]/22/77	Nitrate	Blended
Garden City Vill.	None					
Glen Cove, City of	None					
Great Neck No.W.A. of	30	1	[illegible]	1970	Chloride	Not Used
Hempstead Vill.	None					
Hicksville W.D.	6191	7-2	550	1973	Nitrate	Blended
	3953	6-1	419	07/06/79	Nitrate	Not Used
	6193	8-2	467	09/12/83	Nitrate	Blended
	8525	3-[illegible]	503	04/16/90	Nitrate	(b)
	8249	1-5	490	11/20/90	Nitrate	(b)
Jamaica W. S. Co.	693	15D	93	05/01/90	Nitrate	(b)
Jericho W.D.	None					
Levittown W.D.	5301	11	377	06/22/77	Nitrate	Not Used
	2580	3	357	08/25/81	Nitrate	Blended

(a) Wells which cannot be used without treatment or blending to meet MCL
(b) Blending is proposed

Ref. 22, 17|17

NASSAU COUNTY DEPARTMENT OF HEALTH

RESTRICTED PUBLIC SUPPLY WELLS IN NASSAU COUNTY INORGANIC CHEMICALS

1993

WATER SYSTEM	NYSDEC WELL NO. (a)	WATER SYSTEM NO.	DEPTH (ft.)	DATE RESTRICTED	CHEMICAL	STATUS
Lido-Pt. Lookout W.D.	None					
Locust Valley W.D.	None					
Long Beach, City of	None					
Long Island Water Corp.	None					
Manhasset-Lake W.D.	None					
Massapequa W.D.	None					
Mill Neck Estates W.S.	None					
Mineola Village	578	3	407	03/28/77	Nitrate	Not Used
N.Y. Water Service Corp.	3893	2S	151	1966	Nitrate	Not Used
No. Shore Univ Hosp@GC	None					
Old Westbury Vill	None					
Oyster Bay W.D.	None					
Plainview W.D.	4097	3-1	463	08/21/85	Nitrate	Blended
		3-2	358	08/21/85	Nitrate	Blended
Plandome Village	None					
Port Washington W.D.	None					
Rockville Centre Vill	None					
Roosevelt Field W.D.	None					
Roslyn W.D.	None					
Sands Point Vill	None					
Sagamore Hill N.H.S.	None					
Sea Cliff Water Co.	None					
So. Farmingdale W.D.	None					
Split Rock W.S.	None					
Swan Cove W.S.	None					
Uniondale W.D.	None					
Westbury W.D.	None					
West Hempstead W.D.	None					
Williston Park Vill	2487	3	338	1967	Nitrate	Not Used

(a) Wells which cannot be used without treatment or blending to meet MCL

(b) Blending is proposed

REFERENCE 23

FROST ASSOCIATES

P.O.Box 495, Essex, Connecticut 06426
(203) 767-7644 FAX (203) 767-1971

February 17, 1995

To: Ebasco Services Inc.
P.O Box 661
Lyndhurst, New Jersey 07071

Attn: Edgar Aguado

Fr: Frost Associates
P.O. Box 495
Essex, Conn 06426

Tel: (203) 767-7644
Fax: (203) 767-1971

Sub: A.G.O. Associates
449 West John Street, Hicksville, NY

CERCLIS: NYD986888899

Job: 50067

Site Longitude: 73-32-36 73.543327
Site Latitude : 40-45-53 40.764721

The CENTRACTS report below identifies the population, households, and private water wells of each Block Group that lies within, or partially within, the 4, 3, 2, 1, .5, and .25, mile "rings" of the latitude and longitude coordinates above. CENTRACTS may have up to ten radii of any length. 1000 block groups, and 15000 block group sides.

CENTRACTS uses the 1990 Block Group population and Block Group house count data found in the Census Bureau's 1990 STF-1A files. The sources of water supply data are from the Bureau's 1990 STF-3A files. The boundary line coordinates of the Block Groups were extracted from the Census Bureau's 1990 TIGER/Line Files.

CENTRACTS reports are created with programs written by Frost Associates, P.O. Box 495, Essex, Conn. The code was written using Microsoft's Quick-Basic Ver. 4.5.

Latitude and Longitude coordinates identifying a site are entered in degrees and decimal degrees. One or more county files holding Block Group boundary lines are selected for use by CENTRACTS by determining whether the site coordinates fall within the minimum and maximum Lat\Lon coordinates of each county in the state.

Each Block Group line segment has Lat\Lon coordinates representing the "From" and "To" ends of that line. All coordinates from the selected county files are read and converted from degrees, decimal degrees to X\Y miles from the site location. Each line segment is then examined whether it lies within or partially within the maximum ring from the site.

The unique Block Group ID numbers of each line segment that lie within the maximum ring are retained. All Block Group boundary lines matching the Block Group numbers are then extracted from the respective county files to obtain all sides of the included Block Groups. Boundary records are then sorted in adjacent side order to determine the shape and area of each Block Group polygon.

A method to solve for the area of a polygon is to take one-half the sum of the products obtained by multiplying each X-coordinate by the difference between the adjacent Y-coordinates. For a polygon with coordinates at adjacent angles A, B, C, D, and E. The formula can be expressed:

$$Area = 1/2\{X_a(Y_e-Y_b)+ X_b(Y_a-Y_b)+ X_c(Y_b-Y_d)+ X_d(Y_c-Y_e)+ X_e(Y_d-Y_a)\}$$

For each ring, the selected Block Groups will be inside, outside, or intersected by the ring. When a polygon is intersected, the partial Block Group area within that ring is calculated using the method described below.

When a ring intersects a Block Group, the intersect points are solved and plotted at the points where the ring enters and exits the shape. The chord line, a line within the circle connecting the intersect points is determined. This chord line is used to calculate the segment area, the half moon shape between the chord line and the ring, and the sub-polygon created by the chord line and the Block Group boundaries that lie outside the ring.

The segment area is subtracted from the sub-polygon area to determine the area of the sub-polygon outside the ring. The area outside the ring is then subtracted from the area of the entire polygon to arrive at the inside area. This inside area is then divided by the tract's total area to determine the percentage of area within the ring. This process is repeated for each block group that is intersected by one of the rings. The total area, partial area, and percentage of partial area of those block groups within, or partially within a ring, are held in memory for the report.

On occasion, the algorithm described above is unable to determine the area of the partial area. Within the report program is a "Paint" routine which allows an enclosed shape to be highlighted. Another routine calculates the percentage of highlighted screen pixels to the pixels within the polygon. A manual entry is allowed. Both the "paint" method and manual entry method over ride the calculated method.

CENTRACTS lists, starting on page 4, all Block Groups in State, County, Census Tract, and Block Group ID order that lie within, or partially within, the maximum ring. Each Block Group is identified by a City or Town name and by the Block Group's State, County, Tract and Block Group ID number. Following is the Block Group's 1990 populu tion and house count extracted from the Census Bureau's 1990 STF-1A files.

The next four columns display water source data from the 1990 STF-3A files. The first column is "Units with Public system or private company source of water", followed by "Units with individual well, Drilled, source of water"; "Units with individual well, Dug, source of water" and "Units with Other source of water".

For each ring, CENTRACTS then shows the Block Groups that are within that ring, the Block Group's total area in square miles, the partial area of the Block Group within that ring, and the partial percentage within the ring. The areas of the included Block Group and the partial areas are then totaled.

The last section tallies the demographic data within each ring. The percentage of area for each Block Group is multiplied times the census data for that Block Group and totaled for all Block Group's within the ring. Ring totals are then determined by subtracting the three mile data from the four mile, the two mile from the three mile, one from the two, etc... Population on private wells is calculated using the formula: ((Drilled + Dug Wells) / Households) * Population

Mp. 20, 0130

No.	City	Block Group ID			Blk Grp People	House-Holds	Public Water	Drilled Wells	Dug Wells	Other
1	North Hempstead	36059	3038	1	1050	355	349	0	0	0
2	North Hempstead	36059	3038	2	1046	356	355	0	0	0
3	North Hempstead	36059	3038	3	1142	370	380	0	0	0
4	North Hempstead	36059	3038	4	668	226	230	0	0	0
5	North Hempstead	36059	3038	5	1201	560	553	0	0	0
6	North Hempstead	36059	3039	1	1328	389	423	0	0	0
7	North Hempstead	36059	3039	2	669	207	202	0	0	0
8	North Hempstead	36059	3039	3	530	186	188	0	0	0
9	North Hempstead	36059	3039	4	1265	396	362	0	0	0
10	North Hempstead	36059	3041	1	1116	347	329	0	0	0
11	North Hempstead	36059	3041	2	837	259	261	0	0	0
12	North Hempstead	36059	3041	3	1230	526	542	0	0	0
13	Hempstead	36059	4076	1	601	195	197	0	0	0
14	Hempstead	36059	4076	2	564	170	159	0	0	0
15	Hempstead	36059	4076	3	556	180	168	0	0	0
16	Hempstead	36059	4076	4	949	324	301	0	0	0
17	Hempstead	36059	4076	5	492	162	180	0	0	0
18	Hempstead	36059	4076	6	942	323	346	0	0	0
19	Hempstead	36059	4076	7	699	233	228	0	4	0
20	Hempstead	36059	4076	8	696	223	227	0	0	0
21	Hempstead	36059	4077	1	1212	424	431	0	0	0
22	Hempstead	36059	4077	2	1192	396	392	0	0	0
23	Hempstead	36059	4077	3	1219	404	401	0	0	0
24	Hempstead	36059	4077	4	955	320	334	0	0	0
25	Hempstead	36059	4079	1	1702	643	665	0	0	0
26	Hempstead	36059	4079	2	948	309	295	0	0	0
27	Hempstead	36059	4080	1	1030	362	428	0	0	0
28	Hempstead	36059	4080	2	510	163	133	0	0	0
29	Hempstead	36059	4080	3	866	301	292	0	0	0
30	Hempstead	36059	4080	4	1195	401	403	0	0	0
31	Hempstead	36059	4080	5	730	243	219	0	0	0
32	Hempstead	36059	4080	6	716	223	237	0	0	0
33	Hempstead	36059	4080	7	1095	325	290	0	0	16
34	Hempstead	36059	4081	2	1376	481	470	0	0	0
35	Hempstead	36059	4081	3	923	296	318	0	0	0
36	Hempstead	36059	4081	6	1184	400	373	0	0	0
37	Hempstead	36059	4081	7	1449	458	421	0	0	11
38	Hempstead	36059	4082	1	920	282	255	0	0	0
39	Hempstead	36059	4082	2	883	274	286	0	0	0
40	Hempstead	36059	4082	3	787	260	267	0	0	0
41	Hempstead	36059	4082	4	1028	333	366	0	0	0
42	Hempstead	36059	4082	5	860	290	287	0	0	0
43	Hempstead	36059	4082	6	1030	316	286	0	0	0
44	Hempstead	36059	4082	7	934	295	303	0	0	0
45	Hempstead	36059	4083	1	1152	356	365	0	0	0
46	Hempstead	36059	4083	2	768	247	245	0	0	0
47	Hempstead	36059	4083	3	740	234	225	0	0	0
48	Hempstead	36059	4083	4	519	168	167	0	0	0
49	Hempstead	36059	4083	5	1011	324	349	0	0	0
50	Hempstead	36059	4083	6	945	306	301	0	0	0
51	Hempstead	36059	4083	7	1150	388	380	0	0	0
52	Hempstead	36059	4083	8	842	273	264	0	0	0
53	Hempstead	36059	4086	1	677	219	220	0	0	0
54	Hempstead	36059	4086	2	681	204	193	0	0	5
55	Hempstead	36059	4086	3	680	221	223	0	0	0

56	Hempstead	36059	4086	4	897	285	292	0	0	0
57	Hempstead	36059	4086	5	924	359	354	0	0	0
58	Hempstead	36059	4086	6	682	218	219	0	0	0
59	Hempstead	36059	4087	1	765	247	254	0	0	0
60	Hempstead	36059	4087	2	827	248	250	0	0	0
61	Hempstead	36059	4087	3	792	253	243	0	0	0
62	Hempstead	36059	4087	4	856	265	270	0	0	0
63	Hempstead	36059	4087	5	977	304	302	0	0	0
64	Hempstead	36059	4087	6	740	237	235	0	0	0
65	Hempstead	36059	4088	1	655	224	229	0	0	9
66	Hempstead	36059	4088	2	948	335	319	0	0	0
67	Hempstead	36059	4088	3	948	295	289	0	0	0
68	Hempstead	36059	4088	4	999	309	322	0	7	0
69	Hempstead	36059	4088	5	1022	319	319	0	0	7
70	Hempstead	36059	4088	6	893	276	266	0	0	0
71	Hempstead	36059	4088	7	862	269	250	0	8	0
72	Hempstead	36059	4088	8	673	204	206	0	0	0
73	Hempstead	36059	4089	1	1099	366	367	0	0	0
74	Hempstead	36059	4089	2	1173	398	396	0	0	0
75	Hempstead	36059	4089	3	767	242	224	0	0	0
76	Hempstead	36059	4089	4	932	286	264	0	0	13
77	Hempstead	36059	4089	5	751	218	234	0	0	0
78	Hempstead	36059	4089	6	1186	410	415	0	0	7
79	Hempstead	36059	4090	1	446	150	138	0	0	0
80	Hempstead	36059	4090	2	484	154	144	0	0	0
81	Hempstead	36059	4090	3	1124	354	340	0	4	0
82	Hempstead	36059	4090	4	1240	377	385	0	9	0
83	Hempstead	36059	4090	5	1264	364	391	0	0	0
84	Hempstead	36059	4090	6	665	207	186	0	0	0
85	Hempstead	36059	4090	7	766	234	243	0	0	0
86	Hempstead	36059	4091	1	1145	354	339	0	0	6
87	Hempstead	36059	4091	2	841	256	242	0	0	0
88	Hempstead	36059	4091	3	1263	386	397	0	0	0
89	Hempstead	36059	4091	4	1012	305	309	0	0	0
90	Hempstead	36059	4091	5	691	216	233	0	0	0
91	Hempstead	36059	4091	6	769	237	228	0	0	0
92	Hempstead	36059	4092	1	848	266	281	0	7	0
93	Hempstead	36059	4092	2	1110	364	355	0	0	5
94	Hempstead	36059	4092	3	1051	321	297	0	0	0
95	Hempstead	36059	4092	4	771	237	220	0	0	0
96	Hempstead	36059	4092	5	602	199	194	5	0	0
97	Hempstead	36059	4092	6	826	263	276	0	0	0
98	Hempstead	36059	4092	7	1117	350	360	0	0	0
99	Hempstead	36059	4093	1	690	219	220	0	0	0
100	Hempstead	36059	4093	2	494	163	164	0	0	0
101	Hempstead	36059	4093	5	1019	322	312	0	0	0
102	Hempstead	36059	4093	6	1209	371	368	0	0	0
103	Hempstead	36059	4094	1	748	255	250	0	0	0
104	Hempstead	36059	4094	6	518	173	169	0	0	0
105	Hempstead	36059	4096	1	647	234	241	0	0	0
106	Hempstead	36059	4096	4	724	247	254	0	0	0
107	Hempstead	36059	4096	5	1018	360	322	0	9	0
108	Oyster Bay	36059	5183	3	555	203	221	0	0	0
109	Oyster Bay	36059	5183	4	1510	536	538	0	0	0
110	Oyster Bay	36059	5184	3	2192	729	732	0	0	0
111	Oyster Bay	36059	5186	1	1201	419	426	0	0	0
112	Oyster Bay	36059	5186	2	818	262	261	0	0	0
113	Oyster Bay	36059	5186	3	978	318	319	0	0	0
114	Oyster Bay	36059	5186	4	800	268	267	0	0	0
115	Oyster Bay	36059	5186	5	541	170	164	0	0	0
116	Oyster Bay	36059	5187	1	1121	375	400	0	0	0

117	Oyster Bay	36059	5187	2	742	246	229	0	0	0
118	Oyster Bay	36059	5187	3	909	298	281	0	0	0
119	Oyster Bay	36059	5187	4	639	198	183	0	0	0
120	Oyster Bay	36059	5187	5	873	310	313	0	0	0
121	Oyster Bay	36059	5187	6	796	265	252	0	0	0
122	Oyster Bay	36059	5187	7	722	277	311	0	0	0
123	Oyster Bay	36059	5188	1	1121	364	366	0	0	0
124	Oyster Bay	36059	5188	2	756	234	226	0	0	0
125	Oyster Bay	36059	5188	3	1475	479	485	0	0	0
126	Oyster Bay	36059	5189	1	870	362	402	0	0	0
127	Oyster Bay	36059	5189	2	643	217	211	0	0	8
128	Oyster Bay	36059	5189	3	927	313	302	0	0	0
129	Oyster Bay	36059	5189	4	830	264	261	0	0	0
130	Oyster Bay	36059	5189	5	1262	410	385	0	0	0
131	Oyster Bay	36059	5189	6	512	150	150	0	0	0
132	Oyster Bay	36059	5189	7	736	240	225	0	0	0
133	Oyster Bay	36059	5189	8	640	210	222	0	0	0
134	Oyster Bay	36059	5190	1	477	158	146	0	0	0
135	Oyster Bay	36059	5190	2	734	235	257	0	0	0
136	Oyster Bay	36059	5190	3	748	242	224	0	0	0
137	Oyster Bay	36059	5190	4	826	252	275	0	0	0
138	Oyster Bay	36059	5190	5	1055	345	353	0	0	0
139	Oyster Bay	36059	5190	6	1409	441	435	0	0	0
140	Oyster Bay	36059	5190	7	1014	319	302	0	0	0
141	Oyster Bay	36059	5191	1	732	261	276	0	0	0
142	Oyster Bay	36059	5191	2	858	290	300	0	0	0
143	Oyster Bay	36059	5191	3	738	242	250	0	0	0
144	Oyster Bay	36059	5191	4	711	249	280	0	0	0
145	Oyster Bay	36059	5191	5	1093	354	332	0	0	0
146	Oyster Bay	36059	5191	6	1175	417	364	0	0	0
147	Oyster Bay	36059	5191	7	545	181	192	0	0	0
148	Oyster Bay	36059	5192	1	619	219	218	0	0	0
149	Oyster Bay	36059	5192	2	811	264	274	0	0	0
150	Oyster Bay	36059	5192	3	806	261	255	0	0	0
151	Oyster Bay	36059	5192	4	1058	337	318	0	0	0
152	Oyster Bay	36059	5192	5	903	285	270	0	7	0
153	Oyster Bay	36059	5192	6	1143	363	339	0	0	0
154	Oyster Bay	36059	5192	7	724	236	277	0	7	0
155	Oyster Bay	36059	5193	1	1106	364	347	0	0	0
156	Oyster Bay	36059	5193	2	664	284	301	0	0	0
157	Oyster Bay	36059	5193	3	1164	435	426	0	0	0
158	Oyster Bay	36059	5193	4	1052	344	342	0	0	0
159	Oyster Bay	36059	5193	5	973	335	309	0	17	0
160	Oyster Bay	36059	5193	6	401	161	181	0	0	0
161	Oyster Bay	36059	5194	1	1196	378	372	0	0	0
162	Oyster Bay	36059	5194	2	1164	379	376	0	0	0
163	Oyster Bay	36059	5194	3	874	280	276	0	0	4
164	Oyster Bay	36059	5194	4	661	233	242	0	0	0
165	Oyster Bay	36059	5194	5	434	156	156	0	0	0
166	Oyster Bay	36059	5195	1	994	338	332	0	0	0
167	Oyster Bay	36059	5195	2	1155	368	360	0	0	0
168	Oyster Bay	36059	5195	3	662	221	226	0	0	0
169	Oyster Bay	36059	5195	4	668	222	230	0	0	0
170	Oyster Bay	36059	5195	5	533	176	168	0	0	0
171	Oyster Bay	36059	5195	6	700	213	215	0	0	0
172	Oyster Bay	36059	5195	7	1174	391	398	0	0	0
173	Oyster Bay	36059	5199	1	611	192	187	0	0	0
174	Oyster Bay	36059	5199	2	1177	383	363	0	0	0
175	Oyster Bay	36059	5199	3	1612	515	515	0	0	0
176	Oyster Bay	36059	5199	4	1087	357	347	0	0	0
177	Oyster Bay	36059	5199	5	1038	327	362	0	0	0

178	Oyster Bay	36059 5201 1	1032	424	434	0	0	0
179	Oyster Bay	36059 5201 3	683	236	255	0	0	0
180	Oyster Bay	36059 5202 2	791	246	246	0	0	0
181	Oyster Bay	36059 5202 3	670	219	190	7	12	0
182	Oyster Bay	36059 5202 4	715	211	206	0	0	0
183	Oyster Bay	36059 5203 6	805	281	258	0	0	0
184	North Hempstead	36059 3025021	1138	352	323	0	9	15
185	North Hempstead	36059 3025022	1521	498	474	0	0	0
186	North Hempstead	36059 3040015	1127	390	399	0	0	0
187	North Hempstead	36059 3040016	984	308	294	0	0	0
188	North Hempstead	36059 3040017	384	122	122	0	0	0
189	North Hempstead	36059 3040021	609	214	208	0	0	0
190	North Hempstead	36059 3040022	817	351	330	0	0	0
191	North Hempstead	36059 3040023	982	424	432	0	0	14
192	North Hempstead	36059 3040024	499	201	212	0	0	0
193	North Hempstead	36059 3040027	571	198	190	0	7	0
194	North Hempstead	36059 3042011	926	231	211	0	0	0
195	North Hempstead	36059 3042012	1512	351	359	0	0	0
196	North Hempstead	36059 3042013	565	125	107	0	0	0
197	North Hempstead	36059 3042014	1250	275	287	0	0	0
198	North Hempstead	36059 3042015	1098	318	315	0	0	0
199	North Hempstead	36059 3042016	1153	243	261	0	0	0
200	North Hempstead	36059 3042017	1048	238	241	0	0	0
201	North Hempstead	36059 3042021	640	205	247	0	0	0
202	North Hempstead	36059 3042022	0	0	0	0	0	0
203	North Hempstead	36059 3042023	9	4	0	0	0	0
204	North Hempstead	36059 3042024	238	65	76	0	0	0
205	North Hempstead	36059 3042025	328	82	77	0	0	0
206	North Hempstead	36059 3042026	875	288	255	0	0	0
207	North Hempstead	36059 3042027	615	217	206	0	0	0
208	Hempstead	36059 4073019	519	153	148	0	0	0
209	Hempstead	36059 4073021	1545	460	439	0	0	0
210	Hempstead	36059 4078011	593	205	196	0	0	0
211	Hempstead	36059 4078012	929	302	311	0	0	0
212	Hempstead	36059 4078013	1010	378	379	0	0	0
213	Hempstead	36059 4078014	572	182	181	0	0	0
214	Hempstead	36059 4078015	659	213	204	0	0	0
215	Hempstead	36059 4078016	694	227	207	0	0	0
216	Hempstead	36059 4078017	852	266	265	0	0	0
217	Hempstead	36059 4078025	2439	166	182	0	0	0
218	Oyster Bay	36059 5177013	3155	987	1004	0	0	0
219	Oyster Bay	36059 5177041	1959	23	34	0	0	0
220	Oyster Bay	36059 5177051	1708	578	577	0	6	0
221	Oyster Bay	36059 5177052	566	173	179	0	0	0
222	Oyster Bay	36059 5177061	752	0	0	0	0	0
223	Oyster Bay	36059 5182042	2807	1010	999	0	5	0
224	Oyster Bay	36059 5182043	1312	423	423	6	0	0
225	Oyster Bay	36059 5185011	2301	932	975	0	0	0
226	Oyster Bay	36059 5185012	1679	565	542	0	0	0
227	Oyster Bay	36059 5185013	2150	683	679	0	0	0
228	Oyster Bay	36059 5185021	1045	356	368	0	0	0
229	Oyster Bay	36059 5185022	1032	368	338	0	0	0
230	Oyster Bay	36059 5185023	696	326	344	0	0	0
231	Oyster Bay	36059 5196011	1827	588	617	0	0	5
232	Oyster Bay	36059 5196012	794	260	262	0	0	0
233	Oyster Bay	36059 5196013	858	267	257	7	0	0
234	Oyster Bay	36059 5196014	1173	367	362	0	0	0
235	Oyster Bay	36059 5196021	664	220	210	0	0	0
236	Oyster Bay	36059 5196022	854	295	283	0	0	0
237	Oyster Bay	36059 5196023	655	222	216	0	0	0
238	Oyster Bay	36059 5197022	882	297	282	0	0	0

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239	Oyster Bay	36059	5197023	1207	383	376	0	0	0
240	Oyster Bay	36059	5197024	1002	325	320	0	0	0
241	Oyster Bay	36059	5197031	914	299	304	0	9	0
242	Oyster Bay	36059	5197032	1090	341	348	0	0	7
243	Oyster Bay	36059	5197033	1733	568	540	0	0	0
244	Oyster Bay	36059	5197041	1466	485	491	0	0	0
245	Oyster Bay	36059	5197042	1168	385	356	0	0	0
246	Oyster Bay	36059	5197043	699	298	314	0	0	7
247	Oyster Bay	36059	5198011	422	148	143	0	0	0
248	Oyster Bay	36059	5198012	469	162	166	0	0	0
249	Oyster Bay	36059	5198013	913	340	360	0	0	0
250	Oyster Bay	36059	5198014	647	203	201	0	7	0
251	Oyster Bay	36059	5198021	1202	465	453	0	0	0
252	Oyster Bay	36059	5198022	1178	364	359	0	0	0
253	Oyster Bay	36059	5198023	1595	513	502	0	0	0
254	Oyster Bay	36059	5198024	1351	379	383	0	0	0
255	Oyster Bay	36059	5200011	546	180	166	0	0	0
256	Oyster Bay	36059	5200012	1248	404	392	0	0	0
257	Oyster Bay	36059	5200013	1345	448	459	0	0	0
258	Oyster Bay	36059	5200014	952	315	325	0	0	0
259	Oyster Bay	36059	5200015	1720	541	543	0	0	0
260	Oyster Bay	36059	5200019	204	72	75	0	0	0
261	Oyster Bay	36059	5200021	1020	306	287	0	0	0
262	Oyster Bay	36059	5200022	1393	451	436	0	0	0
263	Oyster Bay	36059	5200023	667	225	266	0	0	0
264	Oyster Bay	36059	5200024	1141	362	355	0	0	0
	Totals:			249966	80522	80139	25	134	139

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City	Census Tract ID		Tract People	House Count	Public Water	Drilled Wells	Dug Wells	Other Wells
Hempstead	36059 4088	3	948	295	289	0	0	0
Hempstead	36059 4088	4	999	309	322	0	7	0
Hempstead	36059 4088	5	1022	319	319	0	0	7
Hempstead	36059 4088	6	893	276	266	0	0	0
Hempstead	36059 4088	7	862	269	250	0	8	0
Hempstead	36059 4088	8	673	204	206	0	0	0
Hempstead	36059 4089	1	1099	366	367	0	0	0
Hempstead	36059 4089	2	1173	398	396	0	0	0
Hempstead	36059 4089	3	767	242	224	0	0	0
Hempstead	36059 4089	4	932	286	264	0	0	13
Hempstead	36059 4089	5	751	218	234	0	0	0
Hempstead	36059 4089	6	1186	410	415	0	0	7
Hempstead	36059 4076	1	601	195	197	0	0	0
Hempstead	36059 4076	2	564	170	159	0	0	0
Hempstead	36059 4076	3	556	180	168	0	0	0
Hempstead	36059 4076	4	949	324	301	0	0	0
Hempstead	36059 4076	5	492	162	180	0	0	0
Hempstead	36059 4076	6	942	323	346	0	0	0
Hempstead	36059 4076	7	699	233	228	0	4	0
Hempstead	36059 4076	8	696	223	227	0	0	0
Hempstead	36059 4077	1	1212	424	431	0	0	0
Hempstead	36059 4077	2	1192	396	392	0	0	0
Hempstead	36059 4077	3	1219	404	401	0	0	0
Hempstead	36059 4077	4	955	320	334	0	0	0
Hempstead	36059 4079	1	1702	643	665	0	0	0
Hempstead	36059 4079	2	948	309	295	0	0	0
Hempstead	36059 4080	1	1030	362	428	0	0	0
Hempstead	36059 4080	2	510	163	133	0	0	0
Hempstead	36059 4080	3	866	301	292	0	0	0
Hempstead	36059 4080	4	1195	401	403	0	0	0
Hempstead	36059 4080	5	730	243	219	0	0	0
Hempstead	36059 4080	6	716	223	237	0	0	0
Hempstead	36059 4080	7	1095	325	290	0	0	16
Hempstead	36059 4081	2	1376	481	470	0	0	0
Hempstead	36059 4081	3	923	296	318	0	0	0
Hempstead	36059 4081	6	1184	400	373	0	0	0
Hempstead	36059 4081	7	1449	458	421	0	0	11
Hempstead	36059 4082	1	920	282	255	0	0	0
Hempstead	36059 4082	2	883	274	286	0	0	0
Hempstead	36059 4082	3	787	260	267	0	0	0
Hempstead	36059 4082	4	1028	333	366	0	0	0
Hempstead	36059 4082	5	860	290	287	0	0	0
Hempstead	36059 4082	6	1030	316	286	0	0	0
Hempstead	36059 4082	7	934	295	303	0	0	0
Hempstead	36059 4083	1	1152	356	365	0	0	0
Hempstead	36059 4083	2	768	247	245	0	0	0
Hempstead	36059 4083	3	740	234	225	0	0	0
Hempstead	36059 4083	4	519	168	167	0	0	0
Hempstead	36059 4083	5	1011	324	349	0	0	0
Hempstead	36059 4083	6	945	306	301	0	0	0
Hempstead	36059 4083	7	1150	388	380	0	0	0
Hempstead	36059 4083	8	842	273	264	0	0	0
Hempstead	36059 4086	1	677	219	220	0	0	0
Hempstead	36059 4086	2	681	204	193	0	0	5
Hempstead	36059 4086	3	680	221	223	0	0	0
Hempstead	36059 4086	4	897	285	292	0	0	0

Hempstead	36059	4086	5	924	359	354	0	0	0
Hempstead	36059	4086	6	682	218	219	0	0	0
Hempstead	36059	4087	1	765	247	254	0	0	0
Hempstead	36059	4087	2	827	248	250	0	0	0
Hempstead	36059	4087	3	792	253	243	0	0	0
Hempstead	36059	4087	4	856	265	270	0	0	0
Hempstead	36059	4087	5	977	304	302	0	0	0
Hempstead	36059	4087	6	740	237	235	0	0	0
Hempstead	36059	4088	1	655	224	229	0	0	9
Hempstead	36059	4088	2	948	335	319	0	0	0
Hempstead	36059	4093	2	494	163	164	0	0	0
Hempstead	36059	4093	5	1019	322	312	0	0	0
Hempstead	36059	4093	6	1209	371	368	0	0	0
Hempstead	36059	4094	1	748	255	250	0	0	0
Hempstead	36059	4094	6	518	173	169	0	0	0
Hempstead	36059	4096	1	647	234	241	0	0	0
Hempstead	36059	4096	4	724	247	254	0	0	0
Hempstead	36059	4096	5	1018	360	322	0	9	0
Hempstead	36059	4091	6	769	237	228	0	0	0
Hempstead	36059	4073019		519	153	148	0	0	0
Hempstead	36059	4073021		1545	460	439	0	0	0
Hempstead	36059	4078011		593	205	196	0	0	0
Hempstead	36059	4090	1	446	150	138	0	0	0
Hempstead	36059	4090	2	484	154	144	0	0	0
Hempstead	36059	4090	3	1124	354	340	0	4	0
Hempstead	36059	4090	4	1240	377	385	0	9	0
Hempstead	36059	4090	5	1264	364	391	0	0	0
Hempstead	36059	4090	6	665	207	186	0	0	0
Hempstead	36059	4090	7	766	234	243	0	0	0
Hempstead	36059	4091	1	1145	354	339	0	0	6
Hempstead	36059	4091	2	841	256	242	0	0	0
Hempstead	36059	4091	3	1263	386	397	0	0	0
Hempstead	36059	4091	4	1012	305	309	0	0	0
Hempstead	36059	4091	5	691	216	233	0	0	0
Hempstead	36059	4093	1	690	219	220	0	0	0
Hempstead	36059	4092	1	848	266	281	0	7	0
Hempstead	36059	4092	2	1110	364	355	0	0	5
Hempstead	36059	4092	3	1051	321	297	0	0	0
Hempstead	36059	4092	4	771	237	220	0	0	0
Hempstead	36059	4092	5	602	199	194	5	0	0
Hempstead	36059	4092	6	826	263	276	0	0	0
Hempstead	36059	4092	7	1117	350	360	0	0	0
Hempstead	36059	4078015		659	213	204	0	0	0
Hempstead	36059	4078016		694	227	207	0	0	0
Hempstead	36059	4078017		852	266	265	0	0	0
Hempstead	36059	4078025		2439	166	182	0	0	0
Hempstead	36059	4078013		1010	378	379	0	0	0
Hempstead	36059	4078012		929	302	311	0	0	0
Hempstead	36059	4078014		572	182	181	0	0	0
	Sub Totals:			94690	30006	29779	5	48	79
North Hempstead	36059	3038	4	668	226	230	0	0	0
North Hempstead	36059	3039	4	1265	396	362	0	0	0
North Hempstead	36059	3042027		615	217	206	0	0	0
North Hempstead	36059	3041	1	1116	347	329	0	0	0
North Hempstead	36059	3041	2	837	259	261	0	0	0
North Hempstead	36059	3041	3	1230	526	542	0	0	0
North Hempstead	36059	3038	5	1201	560	553	0	0	0
North Hempstead	36059	3039	1	1328	389	423	0	0	0
North Hempstead	36059	3039	2	669	207	202	0	0	0

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North Hempstead	36059	3039	3	530	186	188	0	0	0
North Hempstead	36059	3038	1	1050	355	349	0	0	0
North Hempstead	36059	3038	2	1046	356	355	0	0	0
North Hempstead	36059	3038	3	1142	370	380	0	0	0
North Hempstead	36059	3025022		1521	498	474	0	0	0
North Hempstead	36059	3040015		1127	390	399	0	0	0
North Hempstead	36059	3040016		984	308	294	0	0	0
North Hempstead	36059	3040017		384	122	122	0	0	0
North Hempstead	36059	3040021		609	214	208	0	0	0
North Hempstead	36059	3040022		817	351	330	0	0	0
North Hempstead	36059	3040023		982	424	432	0	0	14
North Hempstead	36059	3040024		499	201	212	0	0	0
North Hempstead	36059	3040027		571	198	190	0	7	0
North Hempstead	36059	3042011		926	231	211	0	0	0
North Hempstead	36059	3042012		1512	351	359	0	0	0
North Hempstead	36059	3042013		565	125	107	0	0	0
North Hempstead	36059	3042014		1250	275	287	0	0	0
North Hempstead	36059	3042015		1098	318	315	0	0	0
North Hempstead	36059	3042016		1153	243	261	0	0	0
North Hempstead	36059	3042017		1048	238	241	0	0	0
North Hempstead	36059	3042021		640	205	247	0	0	0
North Hempstead	36059	3042022		0	0	0	0	0	0
North Hempstead	36059	3042023		9	4	0	0	0	0
North Hempstead	36059	3042024		238	65	76	0	0	0
North Hempstead	36059	3042025		328	82	77	0	0	0
North Hempstead	36059	3042026		875	288	255	0	0	0
North Hempstead	36059	3025021		1138	352	323	0	9	15
	Sub Totals:			30971	9877	9800	0	16	29
Oyster Bay	36059	5183	4	1510	536	538	0	0	0
Oyster Bay	36059	5183	3	555	203	221	0	0	0
Oyster Bay	36059	5186	1	1201	419	426	0	0	0
Oyster Bay	36059	5186	2	818	262	261	0	0	0
Oyster Bay	36059	5186	3	978	318	319	0	0	0
Oyster Bay	36059	5186	4	800	268	267	0	0	0
Oyster Bay	36059	5186	5	541	170	164	0	0	0
Oyster Bay	36059	5187	1	1121	375	400	0	0	0
Oyster Bay	36059	5187	2	742	246	229	0	0	0
Oyster Bay	36059	5184	3	2192	729	732	0	0	0
Oyster Bay	36059	5192	5	903	285	270	0	7	0
Oyster Bay	36059	5192	6	1143	363	339	0	0	0
Oyster Bay	36059	5192	7	724	236	277	0	7	0
Oyster Bay	36059	5193	1	1106	364	347	0	0	0
Oyster Bay	36059	5193	2	664	284	301	0	0	0
Oyster Bay	36059	5193	3	1164	435	426	0	0	0
Oyster Bay	36059	5193	4	1052	344	342	0	0	0
Oyster Bay	36059	5193	5	973	335	309	0	17	0
Oyster Bay	36059	5193	6	401	161	181	0	0	0
Oyster Bay	36059	5194	1	1196	378	372	0	0	0
Oyster Bay	36059	5194	2	1164	379	376	0	0	0
Oyster Bay	36059	5194	3	874	280	276	0	0	4
Oyster Bay	36059	5194	4	661	233	242	0	0	0
Oyster Bay	36059	5194	5	434	156	156	0	0	0
Oyster Bay	36059	5195	1	994	338	332	0	0	0
Oyster Bay	36059	5195	2	1155	368	360	0	0	0
Oyster Bay	36059	5195	3	662	221	226	0	0	0
Oyster Bay	36059	5195	4	668	222	230	0	0	0
Oyster Bay	36059	5195	5	533	176	168	0	0	0
Oyster Bay	36059	5195	6	700	213	215	0	0	0
Oyster Bay	36059	5195	7	1174	391	398	0	0	0

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Oyster Bay	36059	5199	1	611	192	187	0	0	0
Oyster Bay	36059	5199	2	1177	383	363	0	0	0
Oyster Bay	36059	5199	3	1612	515	515	0	0	0
Oyster Bay	36059	5199	4	1087	357	347	0	0	0
Oyster Bay	36059	5199	5	1038	327	362	0	0	0
Oyster Bay	36059	5201	1	1032	424	434	0	0	0
Oyster Bay	36059	5201	3	683	236	255	0	0	0
Oyster Bay	36059	5202	2	791	246	246	0	0	0
Oyster Bay	36059	5202	3	670	219	190	7	12	0
Oyster Bay	36059	5202	4	715	211	206	0	0	0
Oyster Bay	36059	5203	6	805	281	258	0	0	0
Oyster Bay	36059	5187	3	909	298	281	0	0	0
Oyster Bay	36059	5187	4	639	198	183	0	0	0
Oyster Bay	36059	5187	5	873	310	313	0	0	0
Oyster Bay	36059	5187	6	796	265	252	0	0	0
Oyster Bay	36059	5187	7	722	277	311	0	0	0
Oyster Bay	36059	5188	1	1121	364	366	0	0	0
Oyster Bay	36059	5188	2	756	234	226	0	0	0
Oyster Bay	36059	5188	3	1475	479	485	0	0	0
Oyster Bay	36059	5189	1	870	362	402	0	0	0
Oyster Bay	36059	5189	2	643	217	211	0	0	8
Oyster Bay	36059	5189	3	927	313	302	0	0	0
Oyster Bay	36059	5189	4	830	264	261	0	0	0
Oyster Bay	36059	5189	5	1262	410	385	0	0	0
Oyster Bay	36059	5189	6	512	150	150	0	0	0
Oyster Bay	36059	5189	7	736	240	225	0	0	0
Oyster Bay	36059	5189	8	640	210	222	0	0	0
Oyster Bay	36059	5190	1	477	158	146	0	0	0
Oyster Bay	36059	5190	2	734	235	257	0	0	0
Oyster Bay	36059	5190	3	748	242	224	0	0	0
Oyster Bay	36059	5190	4	826	252	275	0	0	0
Oyster Bay	36059	5190	5	1055	345	353	0	0	0
Oyster Bay	36059	5190	6	1409	441	435	0	0	0
Oyster Bay	36059	5190	7	1014	319	302	0	0	0
Oyster Bay	36059	5191	1	732	261	276	0	0	0
Oyster Bay	36059	5191	2	858	290	300	0	0	0
Oyster Bay	36059	5191	3	738	242	250	0	0	0
Oyster Bay	36059	5191	4	711	249	280	0	0	0
Oyster Bay	36059	5191	5	1093	354	332	0	0	0
Oyster Bay	36059	5191	6	1175	417	364	0	0	0
Oyster Bay	36059	5191	7	545	181	192	0	0	0
Oyster Bay	36059	5192	1	619	219	218	0	0	0
Oyster Bay	36059	5192	2	811	264	274	0	0	0
Oyster Bay	36059	5192	3	806	261	255	0	0	0
Oyster Bay	36059	5192	4	1058	337	318	0	0	0
Oyster Bay	36059	5177013		3155	987	1004	0	0	0
Oyster Bay	36059	5177041		1959	23	34	0	0	0
Oyster Bay	36059	5177051		1708	578	577	0	6	0
Oyster Bay	36059	5177052		566	173	179	0	0	0
Oyster Bay	36059	5177061		752	0	0	0	0	0
Oyster Bay	36059	5182042		2807	1010	999	0	5	0
Oyster Bay	36059	5182043		1312	423	423	6	0	0
Oyster Bay	36059	5185011		2301	932	975	0	0	0
Oyster Bay	36059	5185012		1679	565	542	0	0	0
Oyster Bay	36059	5185013		2150	683	679	0	0	0
Oyster Bay	36059	5185021		1045	356	368	0	0	0
Oyster Bay	36059	5185022		1032	368	338	0	0	0
Oyster Bay	36059	5185023		696	326	344	0	0	0
Oyster Bay	36059	5196011		1827	588	617	0	0	5
Oyster Bay	36059	5196012		794	260	262	0	0	0
Oyster Bay	36059	5196013		858	267	257	7	0	0

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Oyster Bay	36059	5196014	1173	367	362	0	0	0
Oyster Bay	36059	5196021	664	220	210	0	0	0
Oyster Bay	36059	5196022	854	295	283	0	0	0
Oyster Bay	36059	5196023	655	222	216	0	0	0
Oyster Bay	36059	5197022	882	297	282	0	0	0
Oyster Bay	36059	5197023	1207	383	376	0	0	0
Oyster Bay	36059	5197024	1002	325	320	0	0	0
Oyster Bay	36059	5197031	914	299	304	0	9	0
Oyster Bay	36059	5197032	1090	341	348	0	0	7
Oyster Bay	36059	5197033	1733	568	540	0	0	0
Oyster Bay	36059	5197041	1466	485	491	0	0	0
Oyster Bay	36059	5197042	1168	385	356	0	0	0
Oyster Bay	36059	5197043	699	298	314	0	0	7
Oyster Bay	36059	5198011	422	148	143	0	0	0
Oyster Bay	36059	5198012	469	162	166	0	0	0
Oyster Bay	36059	5198013	913	340	360	0	0	0
Oyster Bay	36059	5198014	647	203	201	0	7	0
Oyster Bay	36059	5198021	1202	465	453	0	0	0
Oyster Bay	36059	5198022	1178	364	359	0	0	0
Oyster Bay	36059	5198023	1595	513	502	0	0	0
Oyster Bay	36059	5198024	1351	379	383	0	0	0
Oyster Bay	36059	5200011	546	180	166	0	0	0
Oyster Bay	36059	5200012	1248	404	392	0	0	0
Oyster Bay	36059	5200013	1345	448	459	0	0	0
Oyster Bay	36059	5200014	952	315	325	0	0	0
Oyster Bay	36059	5200015	1720	541	543	0	0	0
Oyster Bay	36059	5200019	204	72	75	0	0	0
Oyster Bay	36059	5200021	1020	306	287	0	0	0
Oyster Bay	36059	5200022	1393	451	436	0	0	0
Oyster Bay	36059	5200023	667	225	266	0	0	0
Oyster Bay	36059	5200024	1141	362	355	0	0	0
		Sub Totals:	124305	40639	40560	20	70	31

For Radius of 4 Mi., Circle Area = 50.265482

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
1	North Hempstead	36059 30381	0.188997	0.188997	100.00
2	North Hempstead	36059 30382	0.171104	0.171104	100.00
3	North Hempstead	36059 30383	0.120235	0.120235	100.00
4	North Hempstead	36059 30384	0.329856	0.198477	60.17
5	North Hempstead	36059 30385	0.104536	0.004852	4.64
6	North Hempstead	36059 30391	0.199104	0.199104	100.00
7	North Hempstead	36059 30392	0.205842	0.205842	100.00
8	North Hempstead	36059 30393	0.139648	0.139648	100.00
9	North Hempstead	36059 30394	0.357742	0.349492	97.69
10	North Hempstead	36059 30411	0.224015	0.224015	100.00
11	North Hempstead	36059 30412	0.119484	0.119484	100.00
12	North Hempstead	36059 30413	0.322869	0.322869	100.00
13	Hempstead	36059 40761	0.055134	0.055134	100.00
14	Hempstead	36059 40762	0.046547	0.046547	100.00
15	Hempstead	36059 40763	0.044550	0.044550	100.00
16	Hempstead	36059 40764	0.152091	0.152091	100.00
17	Hempstead	36059 40765	0.088449	0.088449	100.00
18	Hempstead	36059 40766	0.137812	0.137812	100.00
19	Hempstead	36059 40767	0.106248	0.106248	100.00
20	Hempstead	36059 40768	0.122646	0.122646	100.00
21	Hempstead	36059 40771	0.205887	0.205887	100.00
22	Hempstead	36059 40772	0.180840	0.180840	100.00
23	Hempstead	36059 40773	0.137348	0.137348	100.00
24	Hempstead	36059 40774	1.730171	1.730171	100.00
25	Hempstead	36059 40791	0.245898	0.220478	89.66
26	Hempstead	36059 40792	0.193494	0.002848	1.47
27	Hempstead	36059 40801	0.107486	0.107486	100.00
28	Hempstead	36059 40802	0.063695	0.063695	100.00
29	Hempstead	36059 40803	0.095913	0.095913	100.00
30	Hempstead	36059 40804	0.136772	0.032819	24.00
31	Hempstead	36059 40805	0.084019	0.064264	76.49
32	Hempstead	36059 40806	0.080922	0.080922	100.00
33	Hempstead	36059 40807	0.132218	0.132218	100.00
34	Hempstead	36059 40812	0.227662	0.205376	90.21
35	Hempstead	36059 40813	0.096882	0.019892	20.53
36	Hempstead	36059 40816	0.169613	0.010754	6.34
37	Hempstead	36059 40817	0.172148	0.137221	79.71
38	Hempstead	36059 40821	0.109194	0.109194	100.00
39	Hempstead	36059 40822	0.111379	0.111379	100.00
40	Hempstead	36059 40823	0.087913	0.087913	100.00
41	Hempstead	36059 40824	0.093871	0.093871	100.00
42	Hempstead	36059 40825	0.085740	0.085740	100.00
43	Hempstead	36059 40826	0.095128	0.095128	100.00
44	Hempstead	36059 40827	0.207614	0.207614	100.00
45	Hempstead	36059 40831	0.162236	0.161137	99.32
46	Hempstead	36059 40832	0.079017	0.079017	100.00
47	Hempstead	36059 40833	0.089959	0.089959	100.00
48	Hempstead	36059 40834	0.055493	0.050941	91.80
49	Hempstead	36059 40835	0.105820	0.092063	87.00
50	Hempstead	36059 40836	0.113761	0.113761	100.00
51	Hempstead	36059 40837	0.096984	0.096984	100.00
52	Hempstead	36059 40838	0.097774	0.097774	100.00
53	Hempstead	36059 40861	0.070677	0.070677	100.00

54	Hempstead	36059	40862	0.080083	0.080083	100.00
55	Hempstead	36059	40863	0.060197	0.060197	100.00
56	Hempstead	36059	40864	0.107060	0.107060	100.00
57	Hempstead	36059	40865	0.089464	0.089464	100.00
58	Hempstead	36059	40866	0.147735	0.147735	100.00
59	Hempstead	36059	40871	0.076619	0.076619	100.00
60	Hempstead	36059	40872	0.091778	0.091778	100.00
61	Hempstead	36059	40873	0.084510	0.084510	100.00
62	Hempstead	36059	40874	0.071584	0.071584	100.00
63	Hempstead	36059	40875	0.124198	0.124198	100.00
64	Hempstead	36059	40876	0.077003	0.077003	100.00
65	Hempstead	36059	40881	0.089186	0.089186	100.00
66	Hempstead	36059	40882	0.131823	0.131823	100.00
67	Hempstead	36059	40883	0.109550	0.109550	100.00
68	Hempstead	36059	40884	0.113510	0.113510	100.00
69	Hempstead	36059	40885	0.097557	0.097557	100.00
70	Hempstead	36059	40886	0.136036	0.136036	100.00
71	Hempstead	36059	40887	0.077167	0.077167	100.00
72	Hempstead	36059	40888	0.076282	0.076282	100.00
73	Hempstead	36059	40891	0.136350	0.136350	100.00
74	Hempstead	36059	40892	0.195774	0.195774	100.00
75	Hempstead	36059	40893	0.076851	0.076851	100.00
76	Hempstead	36059	40894	0.095871	0.095871	100.00
77	Hempstead	36059	40895	0.127422	0.127422	100.00
78	Hempstead	36059	40896	0.138018	0.138018	100.00
79	Hempstead	36059	40901	0.075638	0.075638	100.00
80	Hempstead	36059	40902	0.080641	0.080641	100.00
81	Hempstead	36059	40903	0.188447	0.174492	92.59
82	Hempstead	36059	40904	0.123171	0.123171	100.00
83	Hempstead	36059	40905	0.239684	0.239684	100.00
84	Hempstead	36059	40906	0.064381	0.064381	100.00
85	Hempstead	36059	40907	0.109317	0.109317	100.00
86	Hempstead	36059	40911	0.109607	0.109607	100.00
87	Hempstead	36059	40912	0.076665	0.060905	79.44
88	Hempstead	36059	40913	0.142759	0.055912	39.16
89	Hempstead	36059	40914	0.170345	0.170345	100.00
90	Hempstead	36059	40915	0.142895	0.142895	100.00
91	Hempstead	36059	40916	0.105233	0.105233	100.00
92	Hempstead	36059	40921	0.073117	0.073117	100.00
93	Hempstead	36059	40922	0.124451	0.124451	100.00
94	Hempstead	36059	40923	0.138702	0.138702	100.00
95	Hempstead	36059	40924	0.096429	0.096429	100.00
96	Hempstead	36059	40925	0.105620	0.105620	100.00
97	Hempstead	36059	40926	0.092867	0.092867	100.00
98	Hempstead	36059	40927	0.120391	0.120391	100.00
99	Hempstead	36059	40931	0.062021	0.053617	86.45
100	Hempstead	36059	40932	0.071737	0.003508	4.89
101	Hempstead	36059	40935	0.128150	0.031672	24.71
102	Hempstead	36059	40936	0.104978	0.102841	97.96
103	Hempstead	36059	40941	0.092331	0.000791	0.86
104	Hempstead	36059	40946	0.053748	0.014369	26.74
105	Hempstead	36059	40961	0.145226	0.000946	0.65
106	Hempstead	36059	40964	0.075090	0.000033	0.04
107	Hempstead	36059	40965	0.242335	0.000176	0.07
108	Oyster Bay	36059	51833	0.186444	0.068198	36.58
109	Oyster Bay	36059	51834	0.282894	0.188602	66.67
110	Oyster Bay	36059	51843	0.400257	0.051806	12.94
111	Oyster Bay	36059	51861	0.304406	0.304406	100.00
112	Oyster Bay	36059	51862	0.125043	0.125043	100.00
113	Oyster Bay	36059	51863	0.119058	0.119058	100.00
114	Oyster Bay	36059	51864	0.134761	0.134761	100.00

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449 West John Street, Hicksville, NY

115	Oyster Bay	36059 51865	0.305177	0.305177	100.00
116	Oyster Bay	36059 51871	0.249214	0.232265	93.20
117	Oyster Bay	36059 51872	0.159158	0.159158	100.00
118	Oyster Bay	36059 51873	0.107863	0.107863	100.00
119	Oyster Bay	36059 51874	0.116967	0.116967	100.00
120	Oyster Bay	36059 51875	0.133719	0.133719	100.00
121	Oyster Bay	36059 51876	0.093346	0.093346	100.00
122	Oyster Bay	36059 51877	0.545845	0.545845	100.00
123	Oyster Bay	36059 51881	0.198554	0.198554	100.00
124	Oyster Bay	36059 51882	0.280599	0.280599	100.00
125	Oyster Bay	36059 51883	0.161828	0.161828	100.00
126	Oyster Bay	36059 51891	0.081302	0.081302	100.00
127	Oyster Bay	36059 51892	0.227774	0.227774	100.00
128	Oyster Bay	36059 51893	0.085295	0.085295	100.00
129	Oyster Bay	36059 51894	0.073320	0.073320	100.00
130	Oyster Bay	36059 51895	0.499862	0.499862	100.00
131	Oyster Bay	36059 5200024	0.170927	0.170927	100.00
132	Oyster Bay	36059 51897	0.089810	0.089810	100.00
133	Oyster Bay	36059 51898	0.280363	0.280363	100.00
134	Oyster Bay	36059 51901	0.083804	0.083804	100.00
135	Oyster Bay	36059 51902	0.075170	0.075170	100.00
136	Oyster Bay	36059 51903	0.100342	0.100342	100.00
137	Oyster Bay	36059 51904	0.105552	0.105552	100.00
138	Oyster Bay	36059 51905	0.210125	0.210125	100.00
139	Oyster Bay	36059 51906	0.179952	0.179952	100.00
140	Oyster Bay	36059 51907	0.140497	0.140497	100.00
141	Oyster Bay	36059 51911	0.103642	0.103642	100.00
142	Oyster Bay	36059 51912	0.097858	0.097858	100.00
143	Oyster Bay	36059 51913	0.082815	0.082815	100.00
144	Oyster Bay	36059 51914	0.079575	0.079575	100.00
145	Oyster Bay	36059 51915	0.135424	0.135424	100.00
146	Oyster Bay	36059 51916	0.175387	0.175387	100.00
147	Oyster Bay	36059 51917	0.109144	0.109144	100.00
148	Oyster Bay	36059 51921	0.153327	0.153327	100.00
149	Oyster Bay	36059 51922	0.096993	0.096993	100.00
150	Oyster Bay	36059 51923	0.093225	0.093225	100.00
151	Oyster Bay	36059 51924	0.115779	0.115779	100.00
152	Oyster Bay	36059 51925	0.097212	0.097212	100.00
153	Oyster Bay	36059 51926	0.119544	0.119544	100.00
154	Oyster Bay	36059 51927	0.095951	0.095951	100.00
155	Oyster Bay	36059 51931	0.243461	0.243461	100.00
156	Oyster Bay	36059 51932	0.098805	0.098805	100.00
157	Oyster Bay	36059 51933	0.147251	0.147251	100.00
158	Oyster Bay	36059 51934	0.333423	0.333423	100.00
159	Oyster Bay	36059 51935	0.381927	0.381927	100.00
160	Oyster Bay	36059 51936	0.117433	0.117433	100.00
161	Oyster Bay	36059 51941	0.142361	0.142361	100.00
162	Oyster Bay	36059 51942	0.134391	0.134391	100.00
163	Oyster Bay	36059 51943	0.083048	0.083048	100.00
164	Oyster Bay	36059 51944	0.069503	0.069503	100.00
165	Oyster Bay	36059 51945	0.052334	0.052334	100.00
166	Oyster Bay	36059 51951	0.158501	0.158501	100.00
167	Oyster Bay	36059 51952	0.167500	0.167500	100.00
168	Oyster Bay	36059 51953	0.080796	0.080796	100.00
169	Oyster Bay	36059 51954	0.061853	0.061853	100.00
170	Oyster Bay	36059 51955	0.041083	0.041083	100.00
171	Oyster Bay	36059 51956	0.069087	0.069087	100.00
172	Oyster Bay	36059 51957	0.190792	0.190792	100.00
173	Oyster Bay	36059 51991	0.175396	0.175396	100.00
174	Oyster Bay	36059 51992	0.141490	0.141490	100.00
175	Oyster Bay	36059 51993	0.241751	0.241751	100.00

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176	Oyster Bay	36059 51994	0.113192	0.113192	100.00
177	Oyster Bay	36059 51995	0.139888	0.139888	100.00
178	Oyster Bay	36059 52011	2.986861	0.197593	6.62
179	Oyster Bay	36059 52013	0.115082	0.046874	40.73
180	Oyster Bay	36059 52022	0.086453	0.086453	100.00
181	Oyster Bay	36059 52023	0.104822	0.087664	83.63
182	Oyster Bay	36059 52024	0.156304	0.013305	8.51
183	Oyster Bay	36059 52036	0.145328	0.016152	11.11
184	North Hempstead	36059 3025021	2.221788	1.522024	68.50
185	North Hempstead	36059 3025022	3.169718	2.698838	85.14
186	North Hempstead	36059 3040015	0.098573	0.098573	100.00
187	North Hempstead	36059 3040016	0.122987	0.122987	100.00
188	North Hempstead	36059 3040017	0.057347	0.057347	100.00
189	North Hempstead	36059 3040021	0.085424	0.085424	100.00
190	North Hempstead	36059 3040022	0.128385	0.128385	100.00
191	North Hempstead	36059 3040023	0.127377	0.127377	100.00
192	North Hempstead	36059 3040024	0.063783	0.063783	100.00
193	North Hempstead	36059 3040027	0.069069	0.069069	100.00
194	North Hempstead	36059 3042011	0.089794	0.089794	100.00
195	North Hempstead	36059 3042012	0.134207	0.134207	100.00
196	North Hempstead	36059 3042013	0.039952	0.039952	100.00
197	North Hempstead	36059 3042014	0.103009	0.103009	100.00
198	North Hempstead	36059 3042015	0.113197	0.113197	100.00
199	North Hempstead	36059 3042016	0.067982	0.067982	100.00
200	North Hempstead	36059 3042017	0.106913	0.106913	100.00
201	North Hempstead	36059 3042021	0.189930	0.189930	100.00
202	North Hempstead	36059 3042022	0.175476	0.175476	100.00
203	North Hempstead	36059 3042023	0.079544	0.079544	100.00
204	North Hempstead	36059 3042024	0.052872	0.052872	100.00
205	North Hempstead	36059 3042025	0.071369	0.071369	100.00
206	North Hempstead	36059 3042026	0.103189	0.103189	100.00
207	North Hempstead	36059 3042027	0.097809	0.097809	100.00
208	Hempstead	36059 4073019	2.807510	2.118450	75.46
209	Hempstead	36059 4073021	0.272992	0.159904	58.57
210	Hempstead	36059 4078011	0.113864	0.113864	100.00
211	Hempstead	36059 4078012	0.097145	0.097145	100.00
212	Hempstead	36059 4078013	0.129421	0.129421	100.00
213	Hempstead	36059 4078014	0.070464	0.070464	100.00
214	Hempstead	36059 4078015	0.075496	0.075496	100.00
215	Hempstead	36059 4078016	0.080120	0.080120	100.00
216	Hempstead	36059 4078017	0.200627	0.200627	100.00
217	Hempstead	36059 4078025	0.199269	0.199269	100.00
218	Oyster Bay	36059 5177013	6.104655	2.161537	35.41
219	Oyster Bay	36059 5177041	0.534093	0.117621	22.02
220	Oyster Bay	36059 5177051	3.344789	2.800553	83.73
221	Oyster Bay	36059 5177052	2.225364	1.342543	60.33
222	Oyster Bay	36059 5177061	1.186529	1.186529	100.00
223	Oyster Bay	36059 5182042	1.804081	0.139842	7.75
224	Oyster Bay	36059 5182043	0.576658	0.155674	27.00
225	Oyster Bay	36059 5185011	1.314719	1.314719	100.00
226	Oyster Bay	36059 5185012	0.378388	0.378388	100.00
227	Oyster Bay	36059 5185013	0.625430	0.625430	100.00
228	Oyster Bay	36059 5185021	0.225938	0.225938	100.00
229	Oyster Bay	36059 5185022	0.125001	0.125001	100.00
230	Oyster Bay	36059 5185023	0.090633	0.090633	100.00
231	Oyster Bay	36059 5196011	0.305355	0.305355	100.00
232	Oyster Bay	36059 5196012	0.075169	0.075169	100.00
233	Oyster Bay	36059 5196013	0.069029	0.069029	100.00
234	Oyster Bay	36059 5196014	0.121257	0.121257	100.00
235	Oyster Bay	36059 5196021	0.125201	0.125201	100.00
236	Oyster Bay	36059 5196022	0.115305	0.115305	100.00

237	Oyster Bay	36059 5196023	0.125261	0.125261	100.00
238	Oyster Bay	36059 5197022	0.501137	0.026893	5.37
239	Oyster Bay	36059 5197023	0.129256	0.066815	51.69
240	Oyster Bay	36059 5197024	0.232301	0.063607	27.38
241	Oyster Bay	36059 5197031	0.168401	0.168401	100.00
242	Oyster Bay	36059 5197032	0.156392	0.156392	100.00
243	Oyster Bay	36059 5197033	0.261752	0.261752	100.00
244	Oyster Bay	36059 5197041	0.192892	0.192892	100.00
245	Oyster Bay	36059 5197042	0.196304	0.193804	98.73
246	Oyster Bay	36059 5197043	0.163428	0.163428	100.00
247	Oyster Bay	36059 5198011	0.063933	0.063933	100.00
248	Oyster Bay	36059 5198012	0.058990	0.058990	100.00
249	Oyster Bay	36059 5198013	0.122516	0.122516	100.00
250	Oyster Bay	36059 5198014	0.081917	0.081917	100.00
251	Oyster Bay	36059 5198021	0.185254	0.025613	13.83
252	Oyster Bay	36059 5198022	0.195686	0.168240	85.97
253	Oyster Bay	36059 5198023	0.224754	0.224754	100.00
254	Oyster Bay	36059 5198024	0.212011	0.210891	99.47
255	Oyster Bay	36059 5200011	0.526925	0.526925	100.00
256	Oyster Bay	36059 5200012	0.099463	0.099463	100.00
257	Oyster Bay	36059 5200013	0.139997	0.139997	100.00
258	Oyster Bay	36059 5200014	0.099706	0.099706	100.00
259	Oyster Bay	36059 5200015	0.219543	0.219543	100.00
260	Oyster Bay	36059 5200019	0.593182	0.593182	100.00
261	Oyster Bay	36059 5200021	0.527975	0.264280	50.06
262	Oyster Bay	36059 5200022	0.262286	0.208570	79.52
263	Oyster Bay	36059 5200023	0.100953	0.095968	95.06
264	Oyster Bay	36059 51896	0.275912	0.275912	100.00
	Totals:		66.855583	50.291927	

For Radius of 3 Mi., Circle Area = 28.274334

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
6	North Hempstead	36059 30391	0.199104	0.199104	100.00
7	North Hempstead	36059 30392	0.205842	0.205842	100.00
8	North Hempstead	36059 30393	0.139648	0.139648	100.00
9	North Hempstead	36059 30394	0.357742	0.057053	15.95
10	North Hempstead	36059 30411	0.224015	0.224015	100.00
11	North Hempstead	36059 30412	0.119484	0.119484	100.00
12	North Hempstead	36059 30413	0.322869	0.322869	100.00
13	Hempstead	36059 40761	0.055134	0.055134	100.00
14	Hempstead	36059 40762	0.046547	0.046547	100.00
15	Hempstead	36059 40763	0.044550	0.044550	100.00
16	Hempstead	36059 40764	0.152091	0.152091	100.00
17	Hempstead	36059 40765	0.088449	0.088449	100.00
18	Hempstead	36059 40766	0.137812	0.137812	100.00
19	Hempstead	36059 40767	0.106248	0.106248	100.00
20	Hempstead	36059 40768	0.122646	0.122646	100.00
21	Hempstead	36059 40771	0.205887	0.205887	100.00
22	Hempstead	36059 40772	0.180840	0.180840	100.00
23	Hempstead	36059 40773	0.137348	0.137348	100.00
24	Hempstead	36059 40774	1.730171	1.483009	85.71
38	Hempstead	36059 40821	0.109194	0.085775	78.55
42	Hempstead	36059 40825	0.085740	0.035236	41.10
43	Hempstead	36059 40826	0.095128	0.056154	59.03
44	Hempstead	36059 40827	0.207614	0.016375	7.89

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45	Hempstead	36059 40831	0.162236	0.032969	20.32
52	Hempstead	36059 40838	0.097774	0.054468	55.71
53	Hempstead	36059 40861	0.070677	0.070677	100.00
54	Hempstead	36059 40862	0.080083	0.080083	100.00
55	Hempstead	36059 40863	0.060197	0.060197	100.00
56	Hempstead	36059 40864	0.107060	0.107060	100.00
57	Hempstead	36059 40865	0.089464	0.089464	100.00
58	Hempstead	36059 40866	0.147735	0.147735	100.00
59	Hempstead	36059 40871	0.076619	0.076619	100.00
60	Hempstead	36059 40872	0.091778	0.091778	100.00
61	Hempstead	36059 40873	0.084510	0.084510	100.00
62	Hempstead	36059 40874	0.071584	0.071584	100.00
63	Hempstead	36059 40875	0.124198	0.124198	100.00
64	Hempstead	36059 40876	0.077003	0.077003	100.00
65	Hempstead	36059 40881	0.089186	0.025438	28.52
66	Hempstead	36059 40882	0.131823	0.017783	13.49
67	Hempstead	36059 40883	0.109550	0.081014	73.95
68	Hempstead	36059 40884	0.113510	0.113151	99.68
69	Hempstead	36059 40885	0.097557	0.097557	100.00
70	Hempstead	36059 40886	0.136036	0.136036	100.00
71	Hempstead	36059 40887	0.077167	0.077167	100.00
72	Hempstead	36059 40888	0.076282	0.076282	100.00
73	Hempstead	36059 40891	0.136350	0.134330	98.52
74	Hempstead	36059 40892	0.195774	0.195774	100.00
75	Hempstead	36059 40893	0.076851	0.076851	100.00
76	Hempstead	36059 40894	0.095871	0.095871	100.00
77	Hempstead	36059 40895	0.127422	0.127422	100.00
78	Hempstead	36059 40896	0.138018	0.138018	100.00
83	Hempstead	36059 40905	0.239684	0.006990	2.92
84	Hempstead	36059 40906	0.064381	0.060602	94.13
85	Hempstead	36059 40907	0.109317	0.044753	40.94
90	Hempstead	36059 40915	0.142895	0.039631	27.73
91	Hempstead	36059 40916	0.105233	0.068854	65.43
96	Hempstead	36059 40925	0.105620	0.007198	6.82
98	Hempstead	36059 40927	0.120391	0.021728	18.05
111	Oyster Bay	36059 51861	0.304406	0.304406	100.00
112	Oyster Bay	36059 51862	0.125043	0.125043	100.00
113	Oyster Bay	36059 51863	0.119058	0.119058	100.00
114	Oyster Bay	36059 51864	0.134761	0.134761	100.00
115	Oyster Bay	36059 51865	0.305177	0.305177	100.00
119	Oyster Bay	36059 51874	0.116967	0.015605	13.34
121	Oyster Bay	36059 51876	0.093346	0.000086	0.09
122	Oyster Bay	36059 51877	0.545845	0.372204	68.19
123	Oyster Bay	36059 51881	0.198554	0.016109	8.11
124	Oyster Bay	36059 51882	0.280599	0.242145	86.30
125	Oyster Bay	36059 51883	0.161828	0.137430	84.92
126	Oyster Bay	36059 51891	0.081302	0.081302	100.00
127	Oyster Bay	36059 51892	0.227774	0.227774	100.00
128	Oyster Bay	36059 51893	0.085295	0.085295	100.00
129	Oyster Bay	36059 51894	0.073320	0.073320	100.00
130	Oyster Bay	36059 51895	0.499862	0.499862	100.00
132	Oyster Bay	36059 51897	0.089810	0.089810	100.00
133	Oyster Bay	36059 51898	0.280363	0.280363	100.00
134	Oyster Bay	36059 51901	0.083804	0.083804	100.00
135	Oyster Bay	36059 51902	0.075170	0.075170	100.00
136	Oyster Bay	36059 51903	0.100342	0.100342	100.00
137	Oyster Bay	36059 51904	0.105552	0.105552	100.00
138	Oyster Bay	36059 51905	0.210125	0.210125	100.00
139	Oyster Bay	36059 51906	0.179952	0.179952	100.00
140	Oyster Bay	36059 51907	0.140497	0.140497	100.00
141	Oyster Bay	36059 51911	0.103642	0.103642	100.00

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142	Oyster Bay	36059	51912	0.097858	0.097858	100.00
143	Oyster Bay	36059	51913	0.082815	0.082815	100.00
144	Oyster Bay	36059	51914	0.079575	0.079575	100.00
145	Oyster Bay	36059	51915	0.135424	0.135424	100.00
146	Oyster Bay	36059	51916	0.175387	0.175387	100.00
147	Oyster Bay	36059	51917	0.109144	0.109144	100.00
148	Oyster Bay	36059	51921	0.153327	0.153327	100.00
149	Oyster Bay	36059	51922	0.096993	0.096993	100.00
150	Oyster Bay	36059	51923	0.093225	0.093225	100.00
151	Oyster Bay	36059	51924	0.115779	0.115779	100.00
152	Oyster Bay	36059	51925	0.097212	0.097212	100.00
153	Oyster Bay	36059	51926	0.119544	0.119544	100.00
154	Oyster Bay	36059	51927	0.095951	0.095951	100.00
155	Oyster Bay	36059	51931	0.243461	0.243461	100.00
156	Oyster Bay	36059	51932	0.098805	0.098805	100.00
157	Oyster Bay	36059	51933	0.147251	0.147251	100.00
158	Oyster Bay	36059	51934	0.333423	0.333423	100.00
159	Oyster Bay	36059	51935	0.381927	0.381927	100.00
160	Oyster Bay	36059	51936	0.117433	0.117433	100.00
161	Oyster Bay	36059	51941	0.142361	0.142361	100.00
162	Oyster Bay	36059	51942	0.134391	0.134391	100.00
163	Oyster Bay	36059	51943	0.083048	0.083048	100.00
164	Oyster Bay	36059	51944	0.069503	0.069503	100.00
165	Oyster Bay	36059	51945	0.052334	0.052334	100.00
166	Oyster Bay	36059	51951	0.158501	0.158501	100.00
167	Oyster Bay	36059	51952	0.167500	0.167500	100.00
168	Oyster Bay	36059	51953	0.080796	0.080796	100.00
169	Oyster Bay	36059	51954	0.061853	0.061853	100.00
170	Oyster Bay	36059	51955	0.041083	0.041083	100.00
171	Oyster Bay	36059	51956	0.069087	0.069087	100.00
172	Oyster Bay	36059	51957	0.190792	0.190792	100.00
174	Oyster Bay	36059	51992	0.141490	0.002017	1.43
175	Oyster Bay	36059	51993	0.241751	0.092218	38.15
176	Oyster Bay	36059	51994	0.113192	0.113192	100.00
177	Oyster Bay	36059	51995	0.139888	0.135782	97.07
184	North Hempstead	36059	3025021	2.221788	0.376042	16.93
185	North Hempstead	36059	3025022	3.169718	1.315132	41.49
186	North Hempstead	36059	3040015	0.098573	0.048655	49.36
187	North Hempstead	36059	3040016	0.122987	0.050184	40.80
188	North Hempstead	36059	3040017	0.057347	0.009643	16.81
189	North Hempstead	36059	3040021	0.085424	0.085424	100.00
190	North Hempstead	36059	3040022	0.128385	0.128385	100.00
191	North Hempstead	36059	3040023	0.127377	0.127377	100.00
192	North Hempstead	36059	3040024	0.063783	0.063783	100.00
193	North Hempstead	36059	3040027	0.069069	0.069056	99.98
194	North Hempstead	36059	3042011	0.089794	0.089794	100.00
195	North Hempstead	36059	3042012	0.134207	0.134207	100.00
196	North Hempstead	36059	3042013	0.039952	0.039952	100.00
197	North Hempstead	36059	3042014	0.103009	0.103009	100.00
198	North Hempstead	36059	3042015	0.113197	0.113197	100.00
199	North Hempstead	36059	3042016	0.067982	0.067982	100.00
200	North Hempstead	36059	3042017	0.106913	0.106913	100.00
201	North Hempstead	36059	3042021	0.189930	0.189930	100.00
202	North Hempstead	36059	3042022	0.175476	0.175476	100.00
203	North Hempstead	36059	3042023	0.079544	0.079544	100.00
204	North Hempstead	36059	3042024	0.052872	0.052872	100.00
205	North Hempstead	36059	3042025	0.071369	0.071369	100.00
206	North Hempstead	36059	3042026	0.103189	0.103189	100.00
207	North Hempstead	36059	3042027	0.097809	0.097809	100.00
208	Hempstead	36059	4073019	2.807510	0.257711	9.18
210	Hempstead	36059	4078011	0.113864	0.113864	100.00

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211	Hempstead	36059 4078012	0.097145	0.097145	100.00
212	Hempstead	36059 4078013	0.129421	0.129421	100.00
213	Hempstead	36059 4078014	0.070464	0.070464	100.00
214	Hempstead	36059 4078015	0.075496	0.075496	100.00
215	Hempstead	36059 4078016	0.080120	0.080120	100.00
216	Hempstead	36059 4078017	0.200627	0.200627	100.00
217	Hempstead	36059 4078025	0.199269	0.199269	100.00
218	Oyster Bay	36059 5177013	6.104655	0.423887	6.94
220	Oyster Bay	36059 5177051	3.344789	0.961152	28.74
221	Oyster Bay	36059 5177052	2.225364	0.358165	16.09
222	Oyster Bay	36059 5177061	1.186529	1.114262	93.91
225	Oyster Bay	36059 5185011	1.314719	1.314719	100.00
226	Oyster Bay	36059 5185012	0.378388	0.378388	100.00
227	Oyster Bay	36059 5185013	0.625430	0.625430	100.00
228	Oyster Bay	36059 5185021	0.225938	0.225938	100.00
229	Oyster Bay	36059 5185022	0.125001	0.125001	100.00
230	Oyster Bay	36059 5185023	0.090633	0.090633	100.00
231	Oyster Bay	36059 5196011	0.305355	0.302598	99.10
232	Oyster Bay	36059 5196012	0.075169	0.075169	100.00
233	Oyster Bay	36059 5196013	0.069029	0.069029	100.00
234	Oyster Bay	36059 5196014	0.121257	0.121257	100.00
235	Oyster Bay	36059 5196021	0.125201	0.008992	7.18
236	Oyster Bay	36059 5196022	0.115305	0.080505	69.82
237	Oyster Bay	36059 5196023	0.125261	0.125261	100.00
242	Oyster Bay	36059 5197032	0.156392	0.004647	2.97
243	Oyster Bay	36059 5197033	0.261752	0.014470	5.53
248	Oyster Bay	36059 5198012	0.058990	0.001107	1.88
249	Oyster Bay	36059 5198013	0.122516	0.120023	97.96
250	Oyster Bay	36059 5198014	0.081917	0.081917	100.00
255	Oyster Bay	36059 5200011	0.526925	0.482553	91.58
256	Oyster Bay	36059 5200012	0.099463	0.044261	44.50
257	Oyster Bay	36059 5200013	0.139997	0.018483	13.20
260	Oyster Bay	36059 5200019	0.593182	0.429227	72.36
264	Oyster Bay	36059 51896	0.275912	0.275912	100.00
	Totals:		48.507122	28.306761	

For Radius of 2 Mi., Circle Area = 12.566371

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
6	North Hempstead	36059 30391	0.199104	0.199104	100.00
7	North Hempstead	36059 30392	0.205842	0.127188	61.79
10	North Hempstead	36059 30411	0.224015	0.223494	99.77
11	North Hempstead	36059 30412	0.119484	0.074724	62.54
12	North Hempstead	36059 30413	0.322869	0.000345	0.11
13	Hempstead	36059 40761	0.055134	0.055134	100.00
14	Hempstead	36059 40762	0.046547	0.046547	100.00
15	Hempstead	36059 40763	0.044550	0.044550	100.00
16	Hempstead	36059 40764	0.152091	0.152091	100.00
17	Hempstead	36059 40765	0.088449	0.019407	21.94
18	Hempstead	36059 40766	0.137812	0.061640	44.73
20	Hempstead	36059 40768	0.122646	0.102333	83.44
21	Hempstead	36059 40771	0.205887	0.205887	100.00
22	Hempstead	36059 40772	0.180840	0.180595	99.86
23	Hempstead	36059 40773	0.137348	0.078132	56.89
24	Hempstead	36059 40774	1.730171	0.013185	0.76
56	Hempstead	36059 40864	0.107060	0.023675	22.11

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57	Hempstead	36059 40865	0.089464	0.080027	89.45
58	Hempstead	36059 40866	0.147735	0.133469	90.34
59	Hempstead	36059 40871	0.076619	0.029635	38.68
61	Hempstead	36059 40873	0.084510	0.028432	33.64
62	Hempstead	36059 40874	0.071584	0.071584	100.00
63	Hempstead	36059 40875	0.124198	0.100170	80.65
64	Hempstead	36059 40876	0.077003	0.077003	100.00
111	Oyster Bay	36059 51861	0.304406	0.105262	34.58
112	Oyster Bay	36059 51862	0.125043	0.053766	43.00
114	Oyster Bay	36059 51864	0.134761	0.049574	36.79
115	Oyster Bay	36059 51865	0.305177	0.160557	52.61
126	Oyster Bay	36059 51891	0.081302	0.081302	100.00
127	Oyster Bay	36059 51892	0.227774	0.227774	100.00
128	Oyster Bay	36059 51893	0.085295	0.085295	100.00
129	Oyster Bay	36059 51894	0.073320	0.073320	100.00
130	Oyster Bay	36059 51895	0.499862	0.499862	100.00
132	Oyster Bay	36059 51897	0.089810	0.089810	100.00
133	Oyster Bay	36059 51898	0.280363	0.280363	100.00
134	Oyster Bay	36059 51901	0.083804	0.083804	100.00
135	Oyster Bay	36059 51902	0.075170	0.075170	100.00
136	Oyster Bay	36059 51903	0.100342	0.100342	100.00
137	Oyster Bay	36059 51904	0.105552	0.105552	100.00
138	Oyster Bay	36059 51905	0.210125	0.210125	100.00
139	Oyster Bay	36059 51906	0.179952	0.179952	100.00
140	Oyster Bay	36059 51907	0.140497	0.140497	100.00
141	Oyster Bay	36059 51911	0.103642	0.103642	100.00
142	Oyster Bay	36059 51912	0.097858	0.097858	100.00
143	Oyster Bay	36059 51913	0.082815	0.080944	97.74
144	Oyster Bay	36059 51914	0.079575	0.079575	100.00
145	Oyster Bay	36059 51915	0.135424	0.135424	100.00
146	Oyster Bay	36059 51916	0.175387	0.175387	100.00
147	Oyster Bay	36059 51917	0.109144	0.109144	100.00
148	Oyster Bay	36059 51921	0.153327	0.153327	100.00
149	Oyster Bay	36059 51922	0.096993	0.096993	100.00
150	Oyster Bay	36059 51923	0.093225	0.064070	68.73
151	Oyster Bay	36059 51924	0.115779	0.005974	5.16
152	Oyster Bay	36059 51925	0.097212	0.031975	32.89
153	Oyster Bay	36059 51926	0.119544	0.119096	99.63
154	Oyster Bay	36059 51927	0.095951	0.095951	100.00
155	Oyster Bay	36059 51931	0.243461	0.243461	100.00
156	Oyster Bay	36059 51932	0.098805	0.098805	100.00
157	Oyster Bay	36059 51933	0.147251	0.138882	94.32
158	Oyster Bay	36059 51934	0.333423	0.072598	21.77
159	Oyster Bay	36059 51935	0.381927	0.364804	95.52
160	Oyster Bay	36059 51936	0.117433	0.117433	100.00
161	Oyster Bay	36059 51941	0.142361	0.013249	9.31
162	Oyster Bay	36059 51942	0.134391	0.098358	73.19
163	Oyster Bay	36059 51943	0.083048	0.083048	100.00
164	Oyster Bay	36059 51944	0.069503	0.069503	100.00
165	Oyster Bay	36059 51945	0.052334	0.052334	100.00
167	Oyster Bay	36059 51952	0.167500	0.001319	0.79
168	Oyster Bay	36059 51953	0.080796	0.000376	0.47
169	Oyster Bay	36059 51954	0.061853	0.057375	92.76
170	Oyster Bay	36059 51955	0.041083	0.032797	79.83
171	Oyster Bay	36059 51956	0.069087	0.033794	48.92
172	Oyster Bay	36059 51957	0.190792	0.170033	89.12
184	North Hempstead	36059 3025021	2.221788	0.021427	0.96
185	North Hempstead	36059 3025022	3.169718	0.222606	7.02
194	North Hempstead	36059 3042011	0.089794	0.089794	100.00
195	North Hempstead	36059 3042012	0.134207	0.134207	100.00
196	North Hempstead	36059 3042013	0.039952	0.039952	100.00

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197	North Hempstead	36059 3042014	0.103009	0.103009	100.00
198	North Hempstead	36059 3042015	0.113197	0.113197	100.00
199	North Hempstead	36059 3042016	0.067982	0.067982	100.00
200	North Hempstead	36059 3042017	0.106913	0.097202	90.92
201	North Hempstead	36059 3042021	0.189930	0.189930	100.00
202	North Hempstead	36059 3042022	0.175476	0.175476	100.00
203	North Hempstead	36059 3042023	0.079544	0.079544	100.00
204	North Hempstead	36059 3042024	0.052872	0.052872	100.00
205	North Hempstead	36059 3042025	0.071369	0.071369	100.00
206	North Hempstead	36059 3042026	0.103189	0.103189	100.00
207	North Hempstead	36059 3042027	0.097809	0.053705	54.91
210	Hempstead	36059 4078011	0.113864	0.113864	100.00
211	Hempstead	36059 4078012	0.097145	0.097145	100.00
212	Hempstead	36059 4078013	0.129421	0.108663	83.96
213	Hempstead	36059 4078014	0.070464	0.070432	99.95
217	Hempstead	36059 4078025	0.199269	0.021397	10.74
222	Oyster Bay	36059 5177061	1.186529	0.135561	11.43
225	Oyster Bay	36059 5185011	1.314719	1.018154	77.44
226	Oyster Bay	36059 5185012	0.378388	0.378388	100.00
227	Oyster Bay	36059 5185013	0.625430	0.620407	99.20
228	Oyster Bay	36059 5185021	0.225938	0.193701	85.73
229	Oyster Bay	36059 5185022	0.125001	0.125001	100.00
230	Oyster Bay	36059 5185023	0.090633	0.090633	100.00
264	Oyster Bay	36059 51896	0.275912	0.275912	100.00
	Totals:		23.473904	12.592923	

For Radius of 1 Mi., Circle Area = 3.141593

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
21	Hempstead	36059 40771	0.205887	0.025664	12.46
126	Oyster Bay	36059 51891	0.081302	0.051885	63.82
127	Oyster Bay	36059 51892	0.227774	0.224155	98.41
128	Oyster Bay	36059 51893	0.085295	0.085295	100.00
129	Oyster Bay	36059 51894	0.073320	0.073320	100.00
130	Oyster Bay	36059 51895	0.499862	0.499842	100.00
132	Oyster Bay	36059 51897	0.089810	0.089810	100.00
133	Oyster Bay	36059 51898	0.280363	0.280363	100.00
134	Oyster Bay	36059 51901	0.083804	0.083804	100.00
135	Oyster Bay	36059 51902	0.075170	0.075170	100.00
136	Oyster Bay	36059 51903	0.100342	0.033016	32.90
138	Oyster Bay	36059 51905	0.210125	0.166524	79.25
139	Oyster Bay	36059 51906	0.179952	0.144565	80.34
140	Oyster Bay	36059 51907	0.140497	0.019815	14.10
141	Oyster Bay	36059 51911	0.103642	0.010155	9.80
146	Oyster Bay	36059 51916	0.175387	0.009540	5.44
147	Oyster Bay	36059 51917	0.109144	0.073381	67.23
155	Oyster Bay	36059 51931	0.243461	0.007536	3.10
156	Oyster Bay	36059 51932	0.098805	0.019541	19.78
160	Oyster Bay	36059 51936	0.117433	0.064615	55.02
194	North Hempstead	36059 3042011	0.089794	0.000208	0.23
195	North Hempstead	36059 3042012	0.134207	0.082240	61.28
196	North Hempstead	36059 3042013	0.039952	0.039952	100.00
197	North Hempstead	36059 3042014	0.103009	0.040754	39.56
201	North Hempstead	36059 3042021	0.189930	0.159931	84.21
202	North Hempstead	36059 3042022	0.175476	0.167992	95.73
203	North Hempstead	36059 3042023	0.079544	0.003959	4.98

K-4.25, 25125

210	Hempstead	36059 4078011	0.113864	0.068095	59.80
226	Oyster Bay	36059 5185012	0.378388	0.043318	11.45
227	Oyster Bay	36059 5185013	0.625430	0.298981	47.80
230	Oyster Bay	36059 5185023	0.090633	0.008814	9.72
264	Oyster Bay	36059 51896	0.275912	0.275912	100.00
	Totals:		5.477514	3.228152	

For Radius of .5 Mi., Circle Area = 0.785398

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
127	Oyster Bay	36059 51892	0.227774	0.013219	5.80
128	Oyster Bay	36059 51893	0.085295	0.079993	93.78
129	Oyster Bay	36059 51894	0.073320	0.003429	4.68
130	Oyster Bay	36059 51895	0.499862	0.212268	42.47
132	Oyster Bay	36059 51897	0.089810	0.078652	87.58
133	Oyster Bay	36059 51898	0.280363	0.102912	36.71
138	Oyster Bay	36059 51905	0.210125	0.011810	5.62
139	Oyster Bay	36059 51906	0.179952	0.001389	0.77
201	North Hempstead	36059 3042021	0.189930	0.025716	13.54
202	North Hempstead	36059 3042022	0.175476	0.004553	2.59
264	Oyster Bay	36059 51896	0.275912	0.251458	91.14
	Totals:		2.287819	0.785398	

For Radius of .25 Mi., Circle Area = 0.196350

No.	City	Block Group ID	Total Area	Partial Area	% Within Radius
128	Oyster Bay	36059 51893	0.085295	0.009597	11.25
130	Oyster Bay	36059 51895	0.499862	0.049746	9.95
132	Oyster Bay	36059 51897	0.089810	0.001204	1.34
133	Oyster Bay	36059 51898	0.280363	0.010651	3.80
264	Oyster Bay	36059 51896	0.275912	0.125151	45.36
	Totals:		1.231242	0.196350	

Rep. 21 24102

==================== Site Data ==================

Population:	219147.61
Households:	70510.12
Drilled Wells:	19.47
Dug Wells:	114.32
Other Water Sources:	132.04

============= Partial (RING) data ===============

---- Within Ring: 4 Mile(s) and 3 Mile(s) ----

Population:	85476.52 - air pathway
Households:	27579.50
Drilled Wells:	12.13
Dug Wells:	47.10
Other Wells:	63.78

** Population On Private Wells: 183.58 - gw pathway

---- Within Ring: 3 Mile(s) and 2 Mile(s) ----

Population:	63443.66
Households:	20198.77
Drilled Wells:	7.34
Dug Wells:	41.60
Other Wells:	56.12

** Population On Private Wells: 153.71

---- Within Ring: 2 Mile(s) and 1 Mile(s) ----

Population:	55355.11
Households:	18008.43
Drilled Wells:	0.00
Dug Wells:	25.63
Other Wells:	4.27

** Population On Private Wells: 78.77

---- Within Ring: 1 Mile(s) and .5 Mile(s) ----

Population:	11887.97
Households:	3756.30
Drilled Wells:	0.00
Dug Wells:	0.00
Other Wells:	7.41

** Population On Private Wells: 0.00

I-9.20, 20/20

---- Within Ring: .5 Mile(s) and .25 Mile(s) ----

Population:	2488.03
Households:	811.86
Drilled Wells:	0.00
Dug Wells:	0.00
Other Wells:	0.46

** Population On Private Wells: 0.00

---- Within Ring: .25 Mile(s) and 0 Mile(s) ----

Population:	496.32
Households:	155.26
Drilled Wells:	0.00
Dug Wells:	0.00
Other Wells:	0.00

** Population On Private Wells: 0.00

REFERENCE 24

Kef. 24, 112

ARTICLE VI

NASSAU COUNTY PUBLIC HEALTH ORDINANCE

PUBLIC DRINKING WATER SUPPLY

EFFECTIVE FEBRUARY 1, 1990

NASSAU COUNTY DEPARTMENT OF HEALTH

Thomas S. Gulotta
County Executive

George Pickett, M.D., M.P.H.
Commissioner

IXT.24, 212

Section 5. - Protection of Sources of Drinking Water

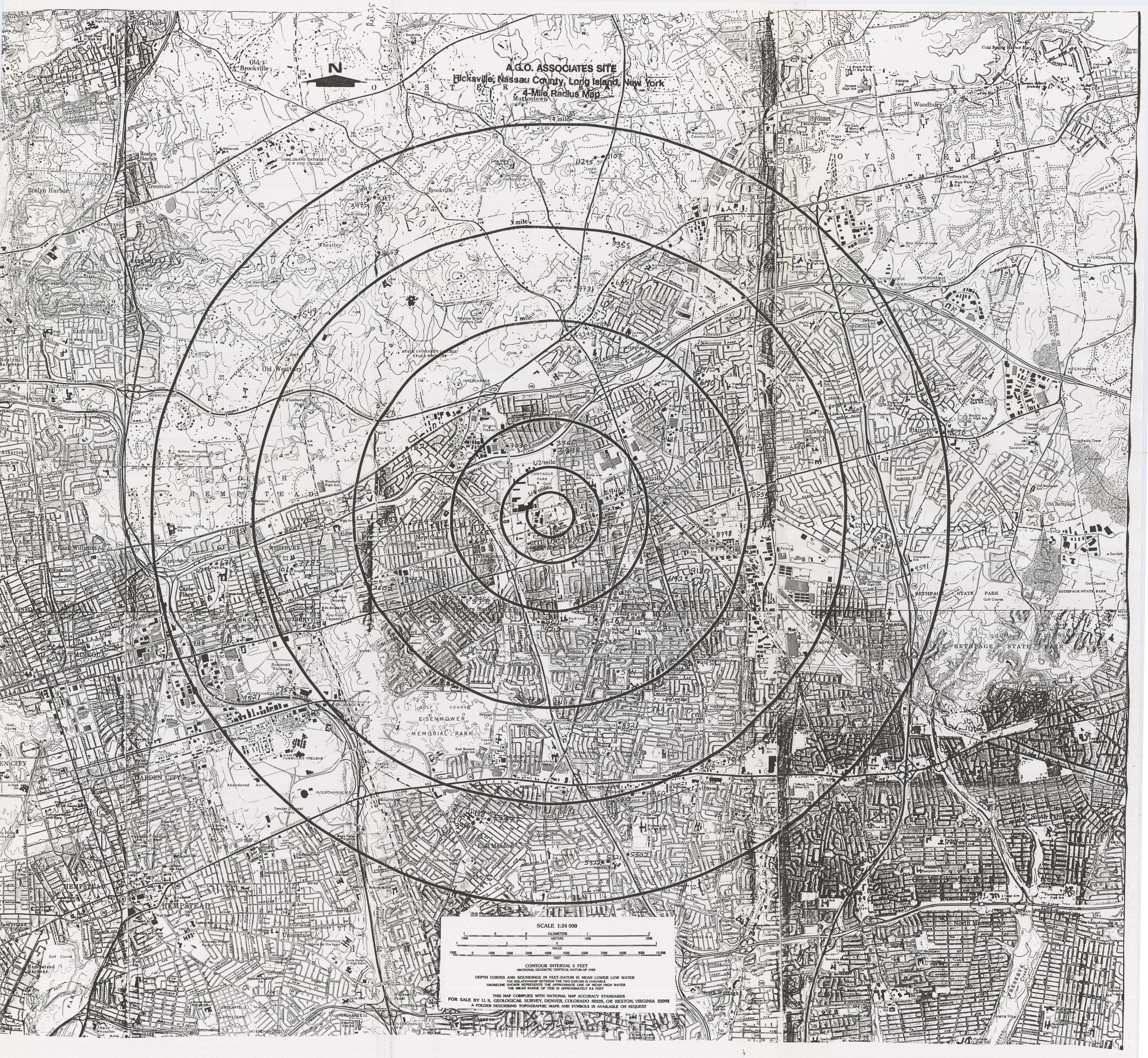
(a) All areas within 50 feet distance minimum from a new public well shall be owned or otherwise controlled by the supplier of water and such areas shall be used for water supply purposes only.

(b) All potential sources of groundwater contamination between 50 feet and 100 feet from a new well shall be effectively controlled by the supplier of water through acquisition of non-pollution easements or the provision of equivalent arrangements. Sanitary sewers and stormwater drains may be permitted between 50 and 100 feet from a well provided that they are constructed in conformance with the prevailing water main standards of the American Water Works Association or they are provided with equivalent protection.

(c) Ownership and other controls prevailing at existing sites of public water supply wells which do not satisfy requirements of Sections 5(a) and 5(b) shall not be further reduced such as by divestiture of land by the supplier of water. Wells on existing sites which are rehabilitated or replaced shall not be considered to be new wells.

(d) The Commissioner shall prepare Countywide Wellhead Protection Regulations which shall be approved by the Board of Health. Such regulations shall take precedence over Watershed Rules and Regulations of individual suppliers of public water except where Countywide Wellhead Protection Regulations are less restrictive.

REFERENCE 25


Ref. 25
111
N
A.G.O. ASSOCIATES SITE
Hicksville, Nassau County, Long Island, New York
4-Mile Radius Map
4 mile
3 mile
2 mile
1/2 mile
SITE LOCATION
Muttontown
Old Westbury
Westbury
Hicksville
Plainview
Syosset
Woodbury
Brookville
Wheatley
Roslyn Harbor
Greenvale
Mineola
Garden City
Hempstead
Uniondale
Bethpage State Park
Eisenhower Memorial Park
Levittown
SCALE 1:24 000
KILOMETERS
METERS
MILES
FEET
CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET–DATUM IS MEAN LOWER LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 0.6 FEET
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

REFERENCE 26

11046/2-91

Ref. 26 111

RECORD OF TELEPHONE CONVERSATION

DATE 3-27-95

TO 5007 File
NAME/FILE NO.

FROM Janis Hottinger

CLIENT/PROJECT AGO Ass.

SUBJECT stormwater runoff

CHARGE: DEPT. NO. ______ CLIENT SYMBOL ______ OFS NO. ______

DISCUSSION WITH Mr. Barrere, County authority, Drainage Design

Sump of North side of West John St.
S.W. basin 417

X # acres (sheetflow) to streets to (gutter flow) catch basins to piping to stormwater basins. No map available.

Runoff directed to sumps.

the ~~system~~
Late-40's - in place
early 50's

≈ 8 to 10' deep
60' by 100'
to 20 acres
unlined - recharge to aquifer

- There could be some runoff that follows Wantagh State Parkway south to Bellmore Creek, but it doesn't seem as likely to me, and majority of S.W. is directed towards Basins (Either North or one S.W. of former site).
- There are numerous private, county, & city St. W. basins.

BY Janis Hottinger (NAME) 3-27-95 (TITLE) ______ (DEPT. NO.)

CC:

REFERENCE 27

Ref. 27, 1/2

11046/2-91

RECORD OF TELEPHONE CONVERSATION

Double-sided

DATE 5-4-95

TO File 50067
NAME/FILE NO.

FROM J. Hottinger

CLIENT/PROJECT AGO Assoc.

SUBJECT Surface H_2O drainage

CHARGE: DEPT. NO. ______ CLIENT SYMBOL ______ OFS NO. ______

DISCUSSION WITH JH → Brian Schneider NCDPW 516-571-6994

We discussed surface water drainage (SWD) for my site + Nassau Co. in general + Mineola area.

- There are 2 primary methods for SWD.
  (1) Sheet flow to street drains to underground piping to unlined recharge basins for gw infiltration, and
  (2) Route sheet flow to natural or man-made canals to streams to tidal areas. (concrete or unlined).
- The primary system for Hicksville area is #1.
- Some basins are owned by private development, state or county.
- Recharge basin #413 is North of West John St. - across from my site. It has a large drainage area.
  North boundary is Princess St
  East " " is Charles St (Past Broadway)
  West " " is Charlotte St.
  South " " is L.I Rail Road
  It only takes in a little of East Side of Cantiague Park.

Total basin area is 540,000 ft^2 and includes slopes + rims of basin.

Maximum infiltrating area is 182,000 ft^2

BY ______ NAME ______ TITLE ______ DEPT. NO.

CC: Basin #128 is [illegible] BM 104

REFERENCE 28

①

On 5-3-95, at 3:14 pm, Ebasco Services, Inc. employees, Janis Hottinger and Joe Gray, performed a drive by of the former A.G.O. Assoc. site on West John St. Hicksville, NY. Because Ebasco had not been granted site access by any of the property owners, we did not go on site, but observed from the perimeter of the property.

Photographs were taken.

②

5-3-95, 3:14 pm
Site drive-by

J.D. Tomfor property is paved w/ asphalt. Relatively flat. There were a lot of buses on the property and a fence secured the site. It had a gate.

Alpha John Assoc. must have been bought by Reliance Utilities. property is also paved w/ asphalt.

Agway property was full of plants out front for sale and had stacks of fertilizer, peat moss, and pallets out back. Site was paved w/ asphalt and appeared flat. Fence + gate secure property.

The entrance to Twin County property - where the majority of the landfill appears to have been located - was from W. John St. betw J.D. Tomfor and Agway.

Kef 11/99

- We drove around to try to see the property. The property was secured by a fence on all borders. The fence was partially knocked down + in disrepair along southeast border.
- The site is unpaved and is covered w/ a gravel + dirt or sand mixture. There are large (30'-40' in height) mounds of concrete + asphalt chunks and rubble mixed with dirt ~~patch~~ along the property perimeter, making it difficult to see inside.
- Relief was difficult to estimate. The terrain was uneven and interrupted by mounds of C/A + soil.
- Observed conveyors + sifter. Did not see monitoring wells
- Could not get to railroad because of fence.
- A restaurant was located across the street (West John). As trucks pulled out, dirt from

wheels was dragged onto road.
- I did not see 3 trailers situated along Twin Co. access road as in Roux Ass. site sketch.
- Gate situated across access road
- An odor wafted through air as I took photos of conveyor from SE corner of site where fence was down. Hard to tell the origin of odor. Could be from machinery.
- Stormwater basin #413 and a park were located across St reet westwardly. ~~Site~~ 5-3-95 JH ~~Stormwater runoff would go southward towards railroad most likely.~~

- [signature] 5-3-95

Ex 26 - 215

Joe + I met w/ Lauree Lutzer of NCDOH for file search. She gave us files for Fumex Sanitation and A.G.O. Assoc.

We met w/ Adam Srisgal of the NCDOH to review potable public H_2O supply info.

We met w/ Donald Spiess of NCDOH to discuss well head protection + surface H_2O drainage.

516-571-3323
240 Old County Rd, Mineola, NY 11501

[signature]
5-3-95

Interview w/ Donald Spiess:

Nassau County - Sole source aquifer.

There are several programs + ordinances run thro' the county, state, + fed. govt. designating well-head protection regulations for public potable supply wells in all of Nassau Co. All programs are being implemented.

There are dry wells used for storm water drainage in parking lots in Nassau Co.

On Sunrise Highway there is a surface water infiltration gallery, or intake system, that was installed in the 1940s by ? Its purpose is to supply potable H_2O (surface) to W. Nassau Co. + NYC in event of an emergency. It has never been used and is shut off.

~~6-10"~~

A 6 to 10 foot diameter pipe would collect water from natural streams + lakes - Intermittent - St. William and Massapequa and Hempstead Lakes.

Ref. 28
4/5

PHOTOGRAPHIC LOG FOR A.G.O. ASSOCIATES SITE

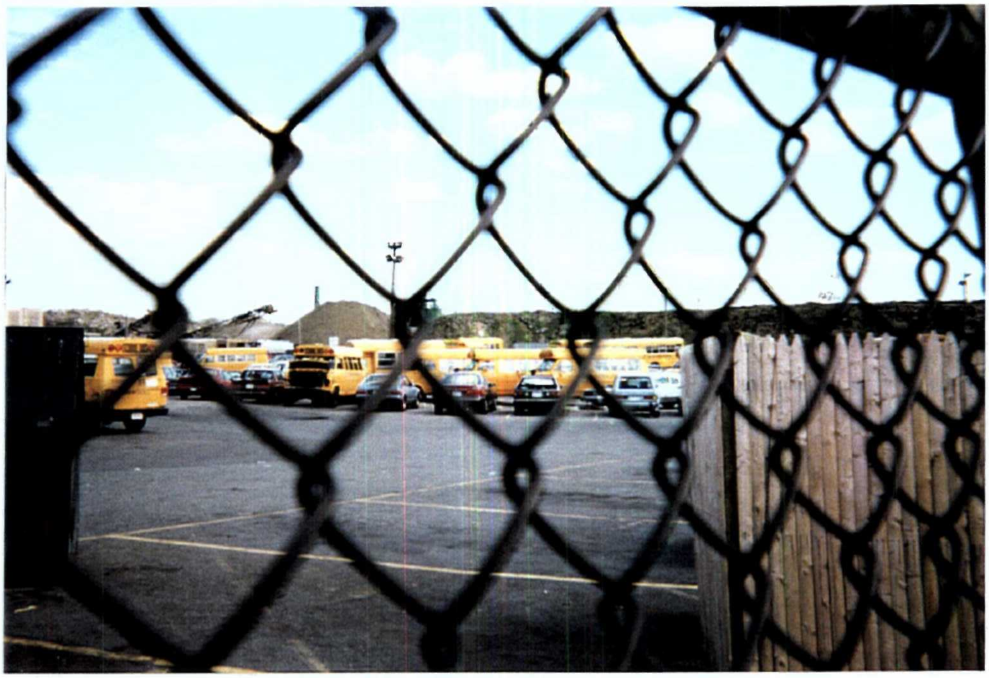


PHOTO 1 - SOUTHEAST VIEW OF TWIN COUNTY ASPHALT PROPERTY THROUGH J.D. TOMFOR PROPERTY.

PHOTO 2 - SOUTH VIEW OF TWIN COUNTY ASPHALT COMPANY PROPERTY THROUGH AGWAY PROPERTY

Ref. 28
5/5

PHOTO 3 - SOUTHWEST VIEW OF TWIN COUNTY ASPHALT COMPANY PROPERTY

PHOTO 4 - SOUTHWEST VIEW OF TWIN COUNTY ASPHALT COMPANY PROPERTY

REFERENCE 29

Ref. 24, 112

D-48

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF

NORTH HEMPSTEAD, NEW YORK

NASSAU COUNTY

PANEL 9 OF 16

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360482 0009 C

MAP REVISED:
MAY 16, 1983

Federal Emergency Management Agency

"C" FRAME

REFERENCE 30

Ref. 50, 1/1

THOMAS S. GULOTTA
COUNTY EXECUTIVE

JOHN R. SPECHT
FIRE MARSHAL

NASSAU COUNTY
STATE OF NEW YORK

NASSAU COUNTY FIRE COMMISSION
OFFICE OF FIRE MARSHAL
899 JERUSALEM AVENUE
P.O. BOX 128
UNIONDALE, NEW YORK 11553
516-566-5200

RECEIVED
JUN 12 1991

June 10, 1991

Roux Associates
775 Park Ave
Huntington, New York 11743
Attent; Eric Arnesen

Dear Sir:

A check of Fire Marshal records as of this date revealed that there are no indications of any known fire or explosion threats due to fire violations at the following locations; Twin County Recycling 449 West John Street, JD Tomfor Bus Co. 445 West John Street and Agway 499 West John Street, Hicksville. This is based on previous fire inspections and does not reflect any changes that may have occurred since the last inspection.

Yours truly,

Richard A. Magee

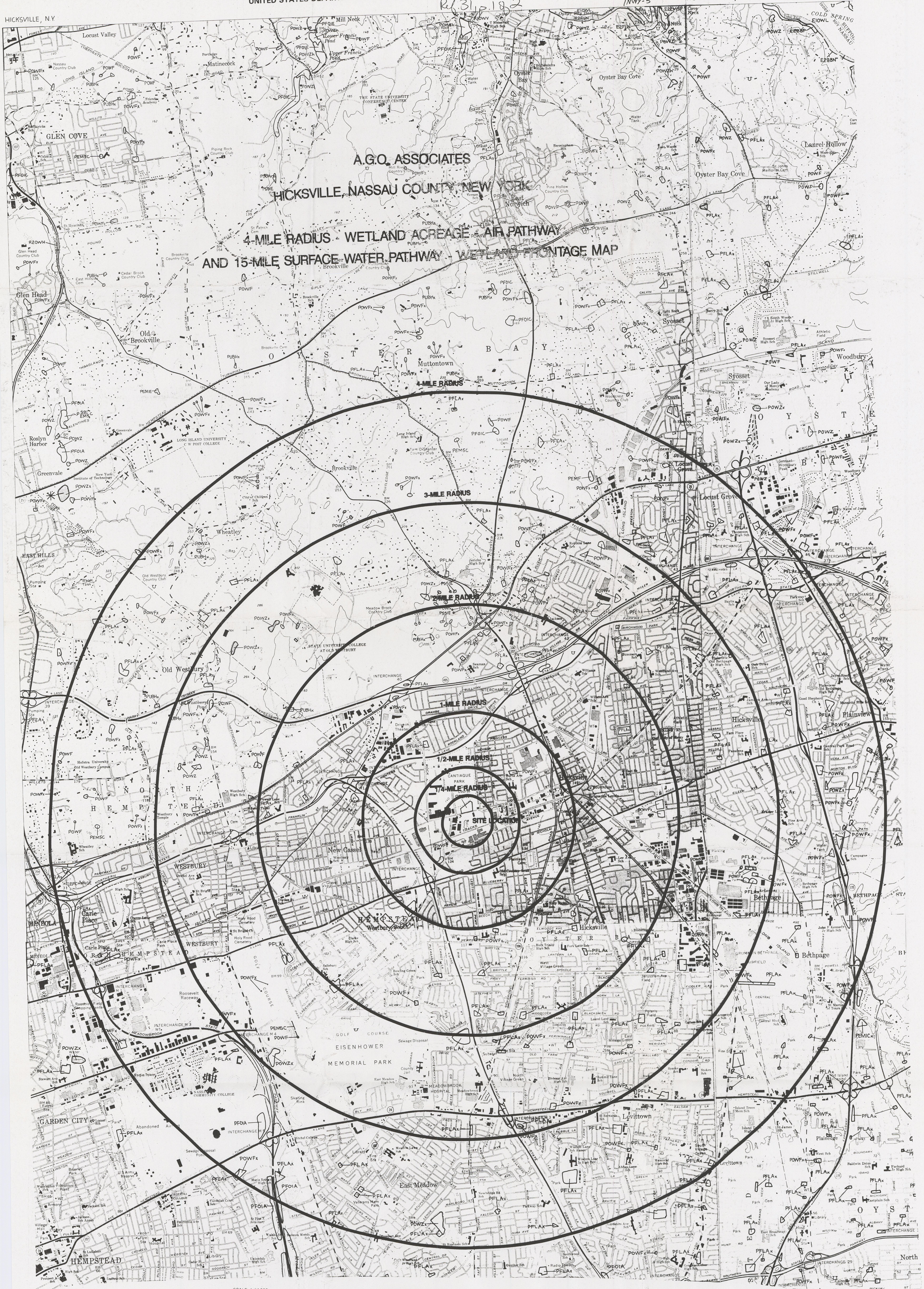
RICHARD A. MAGEE
Fire Inspector
Industrial Division

THOMAS E. REED
Supervising Fire Inspector

2726C

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



Other information concerning the wetland resources depicted on this document may be available. For information, contact:

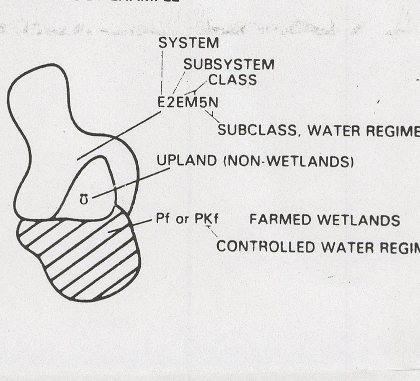
Regional Director (ARDE) Region V
U.S. Fish and Wildlife Service
1 Gateway Center, Suite 700
Newton Corner, Massachusetts 01258

SPECIAL NOTE

This document was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with **Classification of Wetlands and Deep-Water Habitats of the United States** (An Operational Draft), Cowardin, et al, 1977. The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document.

Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

SYMBOLOGY EXAMPLE



NOTES TO THE USER

- Wetlands which have been field examined are indicated on the map by an asterisk (*).
- Dominance type (either vegetative or sedentary animal) can be added to the map by the interested user.
- Additions or corrections to the wetlands information displayed on this map are solicited. Please forward such information to the address indicated.
- Some areas designated R4SB, R4SBW, or R4SBJ (intermittent streams) may not meet the definition of wetlands.

AERIAL PHOTOGRAPHY

DATE: 4 / /81
SCALE: 1:80 000
TYPE: B-W

DATE: / /
SCALE:
TYPE:

DATE: / /
SCALE:
TYPE:

U.S. DEPARTMENT OF THE INTERIOR MARCH 3, 1849

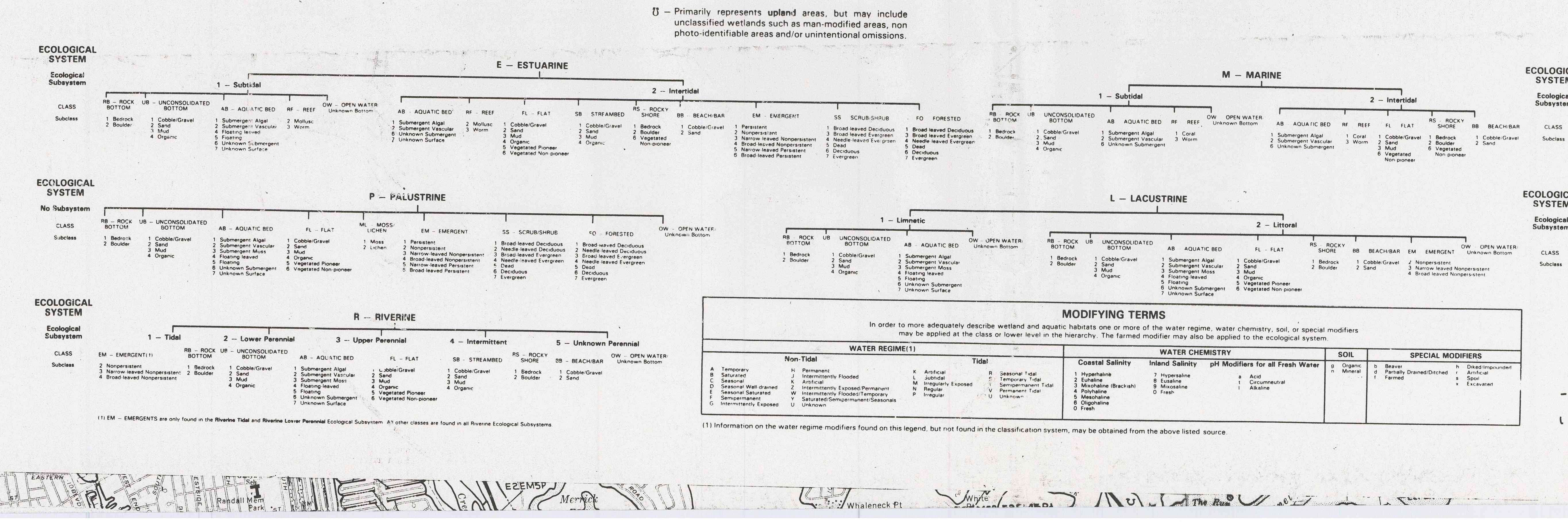
U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Prepared by Office of Biological Services for the National Wetlands Inventory

WETLAND LEGEND

Ʊ – Primarily represents **upland** areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.



REFERENCE 31

DOCUMENTATION FOR WETLANDS CALCULATIONS

The following procedures were used to determine the wetlands values for the surface water and air pathways.

Surface Water Pathway

A map wheel, set to the same scale as the National Wetlands Inventory Maps' scale, was used to measure the wetlands frontage along the surface water stream segments. Only the eligible wetlands, as defined in the U.S.EPA Hazard Ranking System Guidance Manual, November 1992, Highlight A-8, were measured for the surface water pathway.

Air Pathway

A transparent grid, with one acre grids, which corresponded to the National Wetlands Inventory Maps' scale, was overlain on the NWI maps and the acreage was tabulated for each radii in the study area. Only the eligible wetlands, as defined in the U.S.EPA Hazard Ranking System Guidance Manual, November 1992, Highlight A-8, were measured for the surface water pathway.

REFERENCE 32

Ka. 52, 1/1

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

March 1, 1994

Mr. Marvin Fleisher
Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, New York 11779

Dear Mr. Fleisher:

Re: DEC Site No. 130029
Site Name: AGO Associates
Site Address: 499 West John Street
Hicksville, New York 11753

The 60 day notification period and inclusive 30 day public comment period have ended. These requirements were established for the proposed deletion of sites from the New York State Registry of Inactive Hazardous Waste Disposal Sites (the Registry). No comments have been received. Therefore, the site has been deleted from the Registry effective with receipt of this letter.

Please refer questions to Mr. John Swartwout, NYSDEC, 50 Wolf Road, Room 220, Albany, New York 12233-7010, phone (518) 457-0639.

Sincerely,

Robert L. Marino

Robert L. Marino
Chief
Site Control Section
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation

bcc: A. Carlson
R. Dana
B. Bentley
L. Concra
R. Marino
A. Shah
J. Swartwout
File

CJ/ck

REFERENCE 33

K-0-03,P-112

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

OCT 19 1993

CNH Associates
W. John Street
Hicksville, New York 11753

Dear Sir:

The New York State Department of Environmental Conservation (DEC) maintains a Registry of sites where hazardous waste disposal has occurred. Property located at 499 West John Street, Oyster Bay was listed in the Registry because there was some concern that there was hazardous waste there. The DEC is proposing to delist this site from the Registry. The reason for proposing the removal of this site from the Registry is as follows:

- The site was formerly utilized as a construction and demolition debris landfill. The site was first brought to DEC's attention because approximately 100 drums were discovered at the site in 1974. These drums reportedly contained lacquers, thinners, and solvents, and were removed by order of the Nassau County Department of Health. An investigation by DEC of site conditions, including groundwater and soils, did not indicate any adverse environment conditions or public health concerns resulting from hazardous waste activities at this site.

Public comments about delisting this site are being received before the decision to remove this site from the Registry is finalized. The public comment period will end November 16, 1993. A summary of any comments we receive will be made available at our Region 1 Office, SUNY Campus, Loop Road, Building 40, Stony Brook, New York 11790-2356.

If we do not receive any new or additional information during this public comment period that changes our proposal, we will delist this site on or after December 16, 1993. The name and site I.D. number of this property is listed in the Registry is AGO Associates, Site No. 130029.

We are sending this letter to you and others who own property near the site listed above as well as the county and town clerks. We are notifying you about these activities at this site because we believe it is important to keep you informed.

Ref. 33, p. 212

If you have questions or need additional information, the Department of Environmental Conservation maintains a hazardous waste site toll-free number: **1(800)342-9296.** The Department of Health maintains a Health Liaison Program (HeLP) toll-free number: **1(800)458-1158 Ext. 402.**

If you currently are renting or leasing your property to someone else, please share this information with them. If you no longer own the property to which this letter was sent, please provide this information to the new owner and provide this office with the name and address of the new owner so that we can correct our records.

Sincerely,

Robert L. Marino

Robert L. Marino
Chief, Site Control Section
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation

REFERENCE 34

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

WEATHER BUREAU
F. W. Reichelderfer, Chief

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

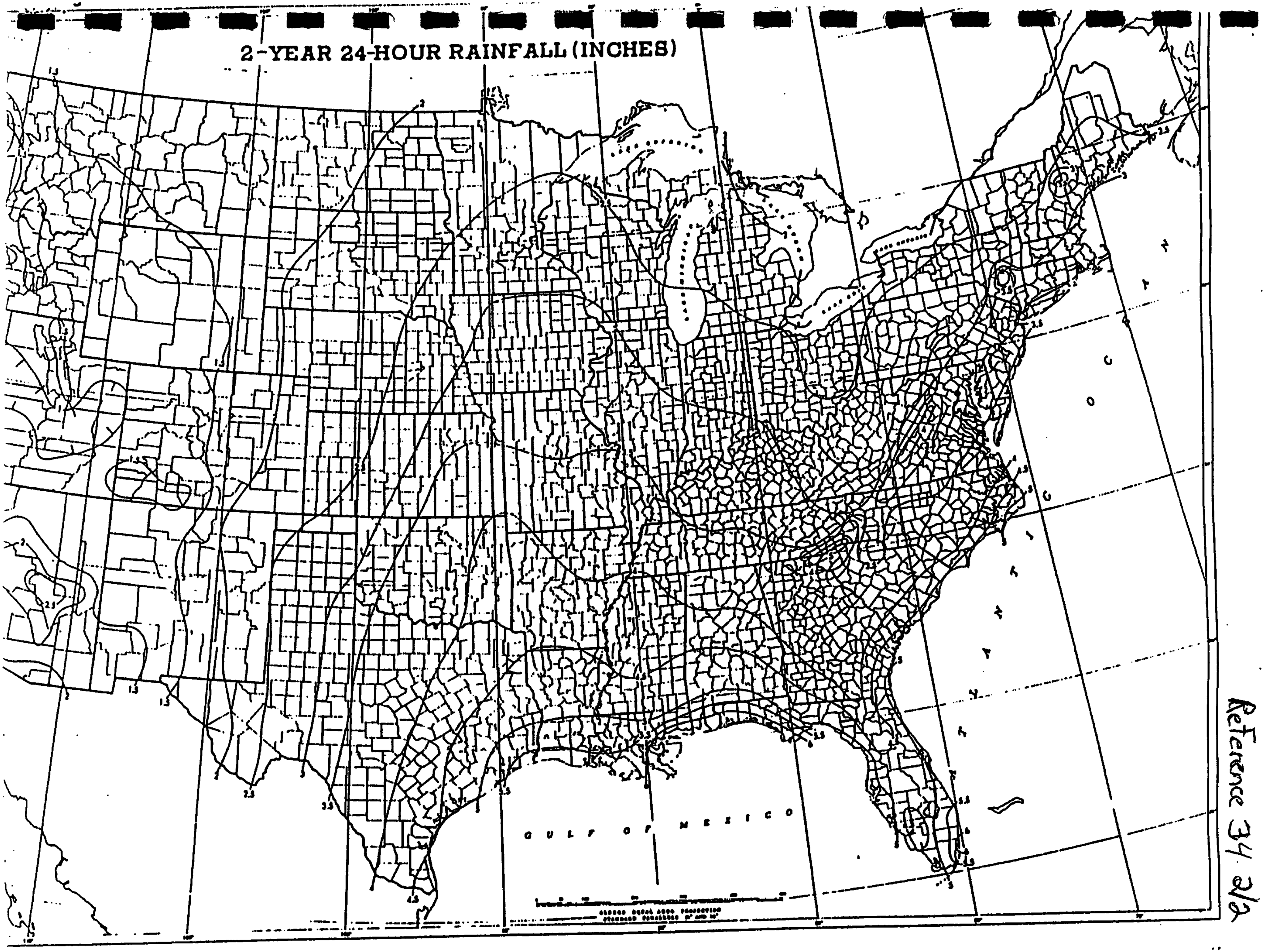
for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

1963

Reference 34 1/2

2-YEAR 24-HOUR RAINFALL (INCHES)



Reference 34 2/2

REFERENCE 35

Act. 55, 169

United States Environmental Protection Agency

Office of Solid Waste and Emergency Response

Publication 9345.103FS
Month 1991

EPA

The Revised Hazard Ranking System: Policy on Evaluating Sites After Waste Removals

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division (OS-230)

Quick Reference Fact Sheet

The U.S. Environmental Protection Agency (EPA) has revised the Hazard Ranking System (HRS) in response to the Superfund Amendments and Reauthorization Act of 1986 (SARA). Under the original HRS, sites were scored based on conditions that existed prior to any removals. Under the revised HRS, waste removals may be taken into consideration for some sites. The waste removal policy is designed to provide an incentive for rapid response actions by potentially responsible parties (PRPs), reducing risks to the public and the environment and allowing for more timely and cost-effective cleanups. At most sites being scored with the HRS, this issue will not arise, at least initially, because no waste removal will have occurred. In the long term, if the new waste removal policy encourages waste removals, the issue may come up more frequently.

This fact sheet outlines the requirements for considering waste removals in scoring a site, defines the concept of "qualifying removal" and explains how to score sites where qualifying removals have been conducted, and discusses some of the management implications of the removal policy. In addition, this fact sheet provides examples of how to score sites where removals have occurred.

REQUIREMENTS FOR CONSIDERING A REMOVAL IN SCORING A SITE

In the preamble to the final HRS (54 FR 51567, December 14, 1990), EPA established three requirements for removal actions that must be met for a removal to be considered in scoring a site. These requirements are listed in Highlight 1 and are discussed below. Removal actions that meet all of these requirements are referred to as "qualifying removals" in this fact sheet. Removal actions that do not meet all three of these criteria are not considered in scoring a site. This fact sheet provides guidance on evaluating sites after qualifying removals only. Guidance on evaluating sites where other types of response actions have occurred is in development.

HIGHLIGHT 1
Requirements for Consideration of Removal Actions

1) The removal action must physically remove waste from the site.

2) The removed waste must be properly treated or disposed in a facility operating in compliance with RCRA or TSCA or permitted by the NRC.

3) The removal action must have occurred prior to the cutoff date (see Highlight 3).

Removal of Waste

The first requirement is that all waste subject to the removal must be physically removed from the site. The purpose of this requirement is to ensure that removals do not simply move the waste and its associated risks to another portion of the same site. As the term is generally used in the Superfund program, a removal action (or removal) does not necessarily involve the physical removal of wastes from the site. For example, Superfund removal actions may include stabilizing or containing waste on site through engineering controls or limiting exposure potential by erecting fences or providing alternate water supplies. These types of Superfund removal actions, more appropriately termed response actions, do not meet the requirement for physical removal and, therefore, do not constitute a qualifying removal.

Proper Destruction or Disposal

The second requirement is that all waste subject to the removal must be properly disposed or destroyed in facilities permitted under and operating in compliance with the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), or permitted by the Nuclear Regulatory Commission (NRC). Highlight 2 describes the types of waste that are appropriate for disposal at each of these types of facilities. The purpose of this requirement is to encourage proper disposal of hazardous wastes and to discourage moving the waste and its associated risks to another site.

[Should we reference EPA's off-site policy? Is the HRS policy more restrictive than the off-site policy?]

Timing of Removal

The third requirement is that the removal must have occurred prior to the cutoff date applicable to the site. This requirement is intended to eliminate the need for rescoring after the SI has begun. This requirement distinguishes a qualifying removal from other removal actions as defined in the HRS rule. Highlight 3 describes the procedure for determining the cutoff date.

HIGHLIGHT 2
Facilities for the Disposal or Destruction of Hazardous Wastes

- RCRA Subtitle C facilities accept wastes containing CERCLA hazardous substances so long as they are not incompatible with the RCRA wastes.
- TSCA facilities accept PCB-contaminated wastes.
- NRC facilities accept radionuclide-contaminated wastes.

HIGHLIGHT 3
Determining the Cutoff Date

1) If an EPA removal has been conducted, a qualifying removal must be completed before the date of the EPA removal assessment.

2) If no EPA removal assessment has been conducted, a qualifying removal must be completed before the <u>earliest</u> of the following dates:

   - Date recommendation for SI entered into CERCLIS;
   - Date of EPA approval of a written SI workplan; or
   - First day of SI field sampling conducted pursuant to CERCLA sections 105 or 120.

The cutoff date for sites without an EPA removal assessment will not be greater than 18 months before the first day of the most recent SI field sampling. This limitation will ensure that the site is evaluated using data that are most representative of site risks.

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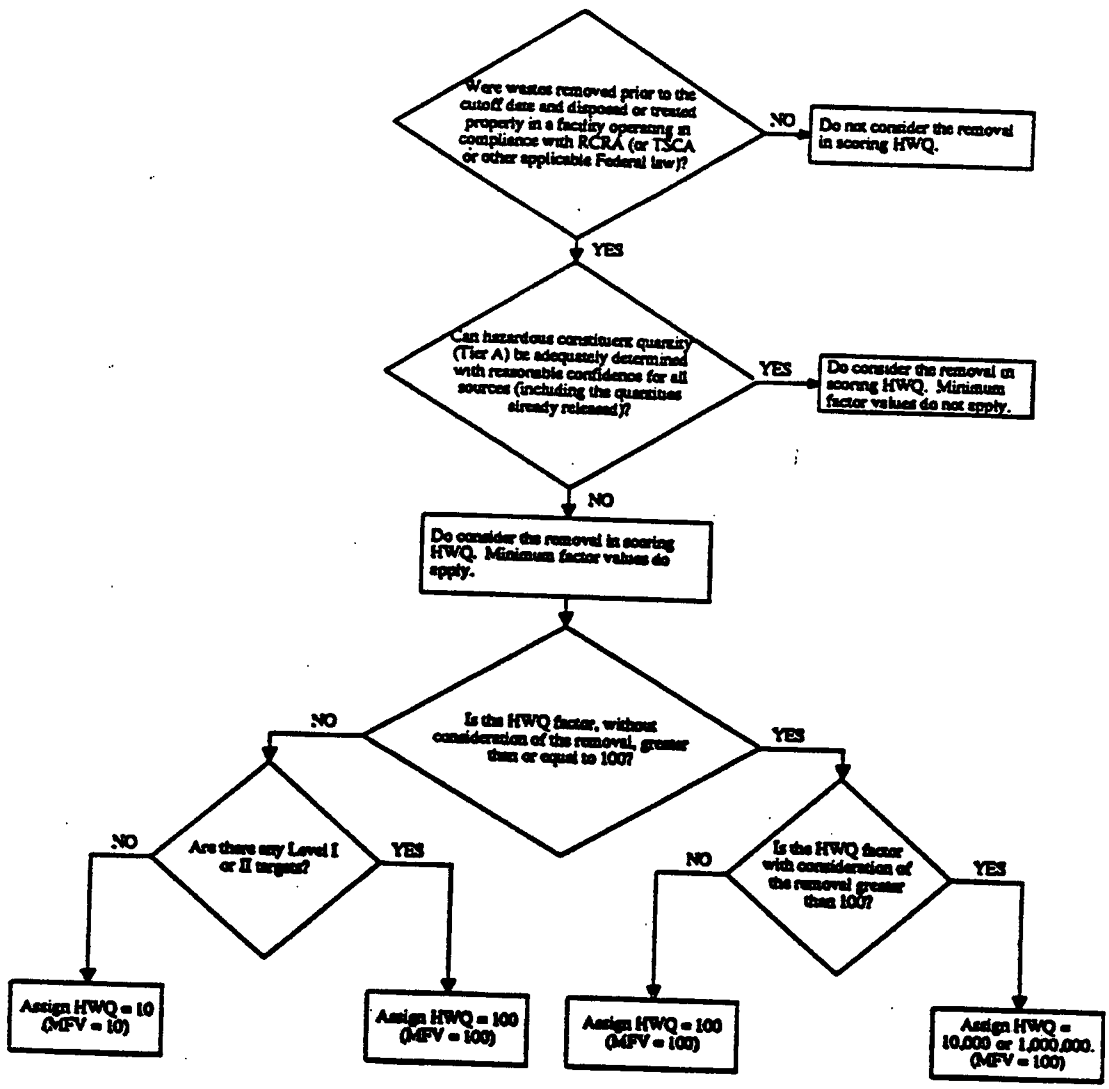
HIGHLIGHT 4
Determining Minimum Factor Values (MFV) for Hazardous Waste Quantity (HWQ) at Sites with Removals (Migration Pathways Only)



SCORING HAZARDOUS WASTE QUANTITY AT SITES WITH REMOVALS

If all three requirements for removals discussed above have not been met, hazardous waste quantity (HWQ) is assigned without taking the removal into account. If the three requirements have been met, the removal is a qualifying removal and is taken into consideration in scoring HWQ. In other words, when there is a qualifying removal, the amount of waste removed is not counted when scoring HWQ; however, certain minimum HWQ factor values may apply. Highlight 4 is a flow chart that illustrates the questions that must be answered to determine appropriate minimum values for the HWQ factor value at sites where hazardous wastes have been removed.

EPA believes that the accuracy of scoring HWQ based on conditions that exist following a removal depends on being able to determine with reasonable confidence the quantity of CERCLA hazardous substances remaining in sources at the site and the quantity already released into the environment. Consequently, minimum HWQ factor values apply when sufficient information to determine the quantity of CERCLA hazardous substances remaining in the sources at the site and the associated releases is not available. The remainder of this section describes evaluation of the HWQ factor for sites with qualifying removals.

HWQ for Migration Pathways

Determining the quantity of CERCLA hazardous substances remaining in the sources and in releases to the environment corresponds to Tier A (hazardous constituent quantity) of the HWQ evaluation. To score HWQ using solely Tier A where there has been a removal, the total mass of all CERCLA hazardous substances in all the evaluated sources and in releases to the environment must be known or estimated with reasonable confidence. (The next section of this fact sheet provides additional information on determining hazardous constituent quantity.) If Tiers B (hazardous wastestream quantity), C (volume), or D (area) are used to determine HWQ for any source, the HWQ factor value for the migration pathways is subject to minimum values. In addition, if Tier A is used to assign HWQ for all sources, but the total mass is not adequately determined, the HWQ factor for migration pathways is also subject to the same minimum values.

When hazardous constituent quantity cannot be adequately determined, minimum values are assigned as follows. At sites where no qualifying removal has taken place and there are no Level I or II targets in a given pathway, the HWQ factor for that pathway is subject to a minimum value of 10; if there are Level I or II targets, the minimum value is 100. At sites where a qualifying removal has occurred, the minimum HWQ factor value for migration pathways depends on several considerations:

- If any targets for a given pathway are subject to Level I or II concentrations, the minimum HWQ factor value for that pathway is 100.
- If the HWQ factor value is 100 or greater without consideration of the removal, then the minimum HWQ factor value is 100.
- If the HWQ factor value is less than 100 without consideration of the removal, then the minimum HWQ factor value is 10.

The exception to the higher minimum HWQ factor value of 100 (i.e., final bullet above) ensures that a site will not receive a higher score simply because a removal has been conducted. *Under no circumstances will a party be penalized for conducting a qualifying removal action.*

HWQ for Soil Exposure Pathway

Evaluating HWQ for the soil exposure pathway differs from evaluating HWQ for the migration pathways in a number of ways. The soil exposure pathway is always evaluated based on conditions at the time of the SI. In addition, the soil exposure pathway evaluates a subset of the total set of sources at a site. Only the first two feet of areas of areas of observed contamination plus tanks, drums, and other container sources are included in evaluating HWQ. Further, the HWQ factor for the soil exposure pathway is subject to a minimum value of 10, regardless of whether a qualifying removal has occurred. Consult the rule at section 5.1.2.2 for further information on evaluating HWQ for the soil exposure pathway.

DETERMINING THE QUANTITY OF HAZARDOUS SUBSTANCES REMAINING IN SOURCES AND IN RELEASES TO THE ENVIRONMENT

EPA's removal policy is meant to encourage the party conducting the removal to ascertain the quantity of hazardous substances remaining in sources on site and the full extent of the associated releases to the environment. If a release to the environment has occurred or is suspected, PRPs are responsible for determining with reasonable confidence the quantity of CERCLA hazardous substances in releases to all media. Highlight 5 outlines a method for determining the quantity of CERCLA hazardous substances in a source and in releases to the environment. In general, this determination parallels the estimation of HWQ using Tier A (hazardous constituent quantity). As discussed previously, if the total mass of all

CERCLA hazardous substances in all sources and in releases to the environment (or in areas of observed contamination) cannot be adequately determined, the HWQ factor value is subject to minimum values.

At sites where a qualifying removal of surface soils or wastes was conducted, Regions are encouraged to do a reasonable amount of additional soil sampling to determine whether the party conducting the removal did, in fact, accurately ascertain hazardous constituent quantity for the remaining waste. Although PRPs are required to quantify the extent of releases to all media to receive the maximum possible reduction in HWQ factor value (i.e., to avoid use of the minimum factor value), Regions are not expected to conduct additional sampling to assess the extent of releases to ground water. If monitoring wells are already in place, Regions are encouraged to take samples, but drilling additional sampling wells generally is not expected.

If subsequent Regional sampling reveals that hazardous waste quantities are greater than the quantity ascertained by the PRP during the removal, the HWQ factor value should be based on these new data. If the new data are sufficient, HWQ may be scored using Tier A (hazardous constituent quantity). If data are not sufficient, then HWQ should be scored using the lower tiers, subject to the minimum values discussed previously.

SCORING OTHER FACTORS AT SITES WITH QUALIFYING REMOVALS

A number of HRS factors (in addition to waste quantity) can be affected by the removal of waste and, in some cases, should be scored taking the results of a qualifying removal into consideration. General guidelines for when changes in factors other than HWQ should be taken into account are provided in Highlight 6. The following sections provide more detailed guidance for several groups of factors.

Likelihood of Release Factors

The results of a qualifying removal may be taken into account in scoring several factors in the likelihood of release factor category for the source subject to the removal. These factors include:

HIGHLIGHT 5
Calculating Hazardous Constituent Quantity at Sites with Removals

Hazardous constituent quantity can be calculated for a source and its associated releases using the following data:

- Representative concentration of each CERCLA hazardous substance in any remaining source materials.
- Mass (for solids) or volume (for liquids) of any remaining source materials.
- Representative concentration of each CERCLA hazardous substance in each environmental medium (i.e., ground water, soil, surface water) to which the source has released.
- Mass (for soil) or volume (for ground water and surface water) of the medium that has been contaminated by the source.

The mass of each hazardous constituent is obtained by multiplying its concentration by the mass or volume of the source or contaminated medium, and the total hazardous constituent quantity is the sum of the individual masses.

Because the concentrations of hazardous substances in a source and its releases are unlikely to be spatially uniform, a statistically relevant number of samples generally are required to adequately characterize the concentrations of hazardous substances. The mass or volume of the contaminated medium is then divided into a number of portions for which a measured concentration can be considered representative. The total hazardous constituent quantity can be calculated by summing the masses of each hazardous substance in each portion of contaminated medium. [Note: These very limited, general guidelines will be superseded by more comprehensive guidance on evaluating hazardous constituent quantity.]

• observed release (or observed contamination);
• area of contamination;
• containment; and
• source type.

An observed release to one of the migration pathways (i.e., ground water, surface water, or air) that was documented prior to a qualifying removal can still be used to score likelihood of release. That is, the fact that a qualifying removal has occurred does not negate the fact that the source already has released to the environment. Observed contamination (and area of contamination) in the soil exposure pathway are intended to reflect continuing risks at the site. These factors should be documented by sampling that represents conditions *at the time of the SI.*

Changes in containment should be taken into consideration only when (1) the change in containment is the result of a qualifying removal and (2) the containment factor value for the affected source is equal to zero for a given pathway after the removal. Changes in containment that result in a lower -- but non-zero -- containment factor value are not taken into consideration in scoring a source. Similarly, changes in source type that result in a new source type factor value of zero are considered in scoring. Changes that result in a lower (but non-zero) value are not considered. Note that source containment and type factors are relevant only when an observed release to a given pathway cannot be documented.

Substance-specific Factors

Some substance-specific HRS factors can be affected if a qualifying removal completely eliminates a hazardous substance from a pathway. Most of the substance-specific factors are components of the waste characteristics factor category. These factors include:

• toxicity;
• mobility;
• persistence;
• bioaccumulation potential; and
• gas migration potential.

None of these factors should be based on a hazardous substance that was completely eliminated from a pathway by a qualifying removal. Note that the removal must include all sources of that hazardous substance *and any prior releases to the environment.* PRPs are responsible for documenting the assertion that <u>all</u> of the hazardous substances from a source have been completely removed. If a portion of a source is eliminated in a qualifying removal, the remaining portion of that source is assumed to contain the same hazardous substances as the removed portion, unless the PRP can document otherwise (e.g., provide analytical results or manifest data that demonstrate convincingly that a given hazardous substance is not present in the unremoved portion of the source). For the soil exposure pathway, toxicity should be based only on substances that are present in areas of observed contamination at the time of the SI.

HIGHLIGHT 6
Scoring Other Factors at Sites with Removals

Changes in factors other than hazardous waste quantity should be taken into consideration in scoring a migration pathway <u>only</u> if:

(1) The change in that factor was a direct result of a qualifying removal; and

(2) The removal completely eliminated a source (and its associated releases) <u>or</u> resulted in a containment factor equal to zero for that pathway.

Targets Factors

The designation of site-specific target distance limits or rings in migration pathways, which is based on distances from sources, may change because a qualifying removal eliminates a source or changes a source in such a way that it is not available to a pathway (i.e., containment factor equal to zero).

• If a source (and associated releases for a given pathway) is eliminated or the characteristics of the source are changed such that the containment value for a given pathway is equal to zero, then that source should not be included for the purposes of measuring target distance rings for that pathway.

- If the characteristics of a source are changed, but that source is still available to a given pathway (i.e., non-zero containment factor), then that source should be included when measuring target distance limits for that pathway.

- If all or part of an area of observed contamination is removed, the removed area should not be included when determining the target distance limits or the area of observed contamination for the soil exposure pathway.

Again, it is the responsibility of the PRP to document the assertion that a source has been completely eliminated.

MANAGEMENT IMPLICATIONS OF THE REMOVAL POLICY

EPA's new removal policy has a number of implications that may be important to site managers. Site managers should be aware of the changes in site scores that may occur under the new removal policy and understand the need to document releases at removal sites. In addition, it is important for EPA's removal and site assessment programs to coordinate for sites that the removal program is considering for a removal action.

Changes in Site Scores under the Removal Policy

The removal policy is intended to provide an incentive for timely and thorough removals by potentially lowering the HRS score for sites where a qualifying removal is conducted. This score lowering may be major or minor, depending on the characteristics of the site and the extent of the removal action. Because the HWQ factor values are grouped in two-order-of-magnitude ranges, large changes in the HWQ factor value may occur for two types of sites: (1) sites where very large quantities of waste have been removed and (2) sites where the HWQ prior to removal was very close to the lower boundary of a HWQ range. The boundaries of the HWQ ranges are 100, 10,000 and 1,000,000. *Likelihood of release will be affected only for pathways where no observed release has been detected and a source is completely eliminated from a pathway by a qualifying removal (or is changed such that the containment factor now equals zero).* Large changes in target factors will occur only if surface soil contamination is removed from areas occupied by resident individuals or at sites that are so large that eliminating a source will result in significant changes in target distance limits or distances to nearest individuals.

Documenting Releases at Removal Sites

At sites where the party conducting a qualifying removal appears to have completely eliminated a source, it is important that this assertion be confirmed through adequate sampling. A source should be considered present for the purposes of scoring factors other than HWQ unless the PRP can document a complete removal. Furthermore, if Regions believe that the extent of the remaining source and its releases are not adequately determined, the minimum HWQ factor values applicable to removal sites should apply. At sites where a PRP has calculated hazardous constituent quantity for a release by determining the extent of migration, Regions are encouraged to conduct sampling, to the extent practicable, to determine whether this information is, in fact, correct.

Qs AND As

Q. What if the RCRA Subtitle C facility in which the removed wastes were disposed has a Class I violation of its operating permit?

A. [To be added.]

Q. How are multiple removals at the same site treated?

A. The number of individual removals does not matter as long as each removal that is considered meets the three requirements. Note that each removal must be completed before the cutoff date to be considered.

Q. If a site had two EPA SIs (one in 4/85 and another in 8/90), what is the cutoff date for qualifying removals?

A. 2/89 (18 months before the 8/90 SI). As shown in Highlight 3, the cutoff date for qualifying removals is usually based on the <u>earliest</u> EPA SI (i.e., earliest of

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recommendation for SI in CERCLIS, EPA approval of SI workplan, or first day of EPA SI field sampling). However, because the first EPA SI for this site took place more than 18 months before the most recent SI, the cutoff date is 2/89. This ensures that data that most accurately reflect site risks are used for scoring.

Q. Are SIs that are conducted by states under cooperative agreements considered EPA SIs for the purposes of the HRS removal policy?

A. Yes.

Q. If an EPA removal occurred after recommendation for SI in CERCLIS but before approval of the SI workplan, should that removal be considered in scoring the site?

A. For sites where an EPA removal was conducted, the date of the removal assessment is the cutoff date for qualifying removals. Because the removal assessment always takes place before the removal, an EPA removal is not taken into account in scoring a site.

Q. A federal facility conducted its own combined PA/SI in 5/84. No subsequent sampling was conducted; the data collected in the 5/84 effort were submitted to fulfill CERCLA section 120 requirements and were used to support HRS scoring for this site. What is the removal cutoff date?

A. Because there was no SI recommendation or EPA approval of SI workplan, the cutoff date is 5/84, the first day of field sampling pursuant to CERCLA section 120. Because no subsequent field sampling was conducted, the 18 month exception does not apply.

Q. If a qualifying removal eliminates the only drums in a group for which data concerning the contents are available, how should toxicity be scored for this source?

A. In the absence of information to the contrary, Regions may assume that the remaining portion of a source contains the same hazardous substances as the removed portion. If a PRP can produce convincing evidence that the hazardous substances in the removed portion of a source are not present in the remaining portion, these substances should not be used to score any substance-specific factors for that source. Regions should not, however, assume that hazardous substances present in one source (e.g., a group of drums) are present in a different source (e.g., a landfill) without supporting information.

Q. Prior to the cutoff date for a site, the PRP removed all of the waste from a pile and transferred it to an on-site containment system that would be assigned a containment factor of zero for all pathways. Should the pile still be considered a source in scoring the site?

A. Yes. The pile should be included and the response action should not be taken into consideration in scoring this site. This response action did not physically remove waste from the site; therefore, it is not a qualifying removal.

Q. If a PRP relocates residents and has their houses demolished after off-site contamination is discovered, should those residents be included in calculating targets factors?

A. Yes. This response action is not a qualifying removal, so the results are not taken into consideration in scoring the site. In fact, in all cases where targets are removed (e.g., relocated, provided with an alternate water supply) as a direct result of site-related contamination -- regardless of whether there is a qualifying removal -- targets factors should be scored without taking these changes into consideration.

EXAMPLES OF SCORING SITES WITH REMOVAL ACTIONS

Highlight 7 contains several examples of removal actions and illustrates the way in which the sources subject to the removal should be scored under the waste removal policy.

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HIGHLIGHT 7 -- EXAMPLES

Example 1

A site has a large landfill as its only source. The top 4 feet of the landfill were excavated and replaced with uncontaminated soil that is now heavily vegetated. The contaminated materials were removed from the site and were properly disposed prior to the cutoff date. An observed release to ground water was established prior to the removal using data from an on-site monitoring well.

Qualification: This is a qualifying removal because it meets all three requirements. The source should be scored taking the removal into consideration.

HWQ: The quantity of excavated materials should not be considered in scoring HWQ. Because it is unlikely that the total mass of all CERCLA hazardous substances in the landfill and releases to environmental media will be known or estimated with reasonable confidence, this site is likely to be subject to a minimum HWQ factor value of either 10 or 100. The HWQ factor value should be calculated considering and not considering the removed materials to determine the appropriate minimum value. If the landfill is scored using Tier C (volume), then the removed 4 feet should be subtracted from the total volume of the waste. If the landfill is scored using Tier D (area), then the removal will not change the HWQ factor value.

Other Factors: Soil Exposure. Because this pathway is concerned with potential direct exposures to surface sources and the top two feet of soil only, replacing the top 4 feet of contaminated material with clean soil has eliminated the soil exposure pathway for this site. Unless contamination can be found in the top two feet of soil at this site, the soil exposure pathway receives a score of zero.

Air. The changes made in conjuction with the removal result in a containment factor of zero for the air pathway; therefore, the landfill is no longer considered a source for the air pathway and is not considered in any air pathway calculation (e.g., HWQ, target distance). Because the landfill is the only source at this site, the air pathway would receive a score of zero, unless an observed release to air was documented prior to the removal.

Ground Water. The observed release to ground water can still be used to score likelihood of release. The effects of the removal should not be taken into consideration in scoring other factors for the ground water pathway.

Surface Water. The changes made in conjunction with the removal do not result in a containment factor of zero for surface water. The effects of the removal should not be taken into account in scoring other factors for the surface water pathway.

Example 2

One of the sources at a site is a waste pile: The wastes in this pile were transferred to drums that currently are stored on site while plans for their disposition are made. The cutoff date for this site is the date of recommendation for an SI in CERCLIS; this response action took place two weeks prior to the SI (i.e., after the cutoff date).

Qualification: This is not a qualifying removal for two reasons. First, this response action did not physically removal wastes from the site. Second, the response action took place after the cutoff date for qualifying removals. This source should be scored without taking the removal into consideration.

REFERENCE 36

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wildlife Resources Center
700 Troy-Schenectady Road
Latham, NY 12110-2400 (518) 783-3932

Ref. 36
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January 18, 1996

Janis Hottinger
Foster Wheeler Environmental Corp.
One Oxford Valley, Suite 200
2300 Lincoln Highway East
Langhorne, PA 19047-1829

Dear Ms. Hottinger:

We have reviewed the New York Natural Heritage Program files with respect to your recent request for biological information concerning the A.G.O. Associates USEPA Site Investigation, and the area within a four mile radius, site location as indicated on your enclosed map, located in the Town of Hempstead, Nassau County, New York State.

Enclosed is a computer printout covering the area you requested to be reviewed by our staff. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare animals, plants and natural communities and/or significant wildlife habitats. You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this proposed project is still active one year from now we recommend that you contact us again so that we can update this response.

Sincerely,
Deborah L Albert
Deborah L. Albert
Information Services
New York Natural Heritage Program

Encs.
cc: Reg. 1, Wildlife Mgr.
Peter Nye, ESU, Delmar

BIOLOGICAL AND CONSERVATION DATA SYSTEM - ELEMENT OCCURRENCE REPORT, 17 JAN 1996
Prepared by N.Y.S.D.E.C. Natural Heritage Program, Latham New York

(This report contains sensitive information which should be treated in a sensitive manner. Refer to the users guide for explanation of codes and ranks.)

* COUNTY & TOWN	USGS TOPO MAP/ LAT. & LONG.	PREC-ISION	LAST SEEN	EO RANK	SCIENTIFIC AND COMMON NAME	ELEMENT TYPE	NY STATUS	US STATUS	HERITAGE RANKS	OFFICE USE	OFFICE	USE
NASSAU												
HEMPSTEAD	AMITYVILLE 404422 732952	M	1928	H	ASTER CONCOLOR SILVERY ASTER	VASCULAR PLANT	E		G4? S1		4007364	33
HEMPSTEAD	AMITYVILLE 404317 732946	M	1934	H	PLATANTHERA CILIARIS ORANGE FRINGED ORCHIS	VASCULAR PLANT	T		G5 S1		4007364	9
HEMPSTEAD	AMITYVILLE 404322 732940	M	1918	H	SCLERIA PAUCIFLORA VAR CAROLINIANA FEWFLOWER NUTRUSH	VASCULAR PLANT	T		G5T4T5 S1		4007364	34
HEMPSTEAD	FREEPORT 404339 733514	S	1992	C	HEMPSTEAD PLAINS GRASSLAND HEMPSTEAD PLAINS GRASSLAND	COMMUNITY	U		G1Q S1		4007365	11
~~HEMPSTEAD~~	~~FREEPORT~~ 404336 733500	~~S~~	~~1991~~	~~B~~	~~DATANA RANAECEPS~~ A HAND-MAID MOTH	~~MOTH~~	~~U~~		~~G4~~ S1		~~4007365~~	~~16~~
HEMPSTEAD	FREEPORT 404334 733507	S	1993	B	AGALINIS ACUTA SANDPLAIN GERARDIA	VASCULAR PLANT	E	LE	G1 S1		4007365	45
HEMPSTEAD	FREEPORT 404314 733130	S	1918	X	AGALINIS ACUTA SANDPLAIN GERARDIA	VASCULAR PLANT	E	LE	G1 S1		4007365	17
HEMPSTEAD	FREEPORT 404334 733507	S	1992	C	AGALINIS VIRGATA PINE-BARREN GERARDIA	VASCULAR PLANT	R		G3G4 S3		4007365	45
HEMPSTEAD	FREEPORT 404334 733507	S	1991	C	ALETRIS FARINOSA STARGRASS	VASCULAR PLANT	U		G5 S2		4007365	45
HEMPSTEAD	FREEPORT 404352 733508	S	1991	CD	ASCLEPIAS VIRIDIFLORA GREEN MILKWEED	VASCULAR PLANT	R		G5 S2		4007365	25
HEMPSTEAD	FREEPORT 404235 733407	M	1946	H	ASTER SOLIDAGINEUS FLAX-LEAF WHITETOP	VASCULAR PLANT	U		G5 S2		4007365	49

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* COUNTY & TOWN		USGS TOPO MAP/ LAT. & LONG.	PREC-ISION	LAST SEEN	EO RANK	SCIENTIFIC AND COMMON NAME	ELEMENT TYPE	NY STATUS	US STATUS	HERITAGE RANKS	OFFICE USE	OFFICE	USE
HEMPSTEAD	No	FREEPORT 404328 733502	S	1992	D	ASTER SOLIDAGINEUS FLAX-LEAF WHITETOP	VASCULAR PLANT	U		G5 S2		4007365	5[illegible]
HEMPSTEAD	No	FREEPORT 404343 733510	M	1985	E	CAREX MESOCHOREA MIDLAND SEDGE	VASCULAR PLANT	U		G4G5 S1		4007365	57
HEMPSTEAD	Yes	FREEPORT 404343 733510	M	1991	E	CUSCUTA PENTAGONA FIELD-DODDER	VASCULAR PLANT	R		G5 S2S3		4007365	57
HEMPSTEAD	Yes	FREEPORT 404331 733512	S	1991	B	DESMODIUM CILIARE LITTLE-LEAF TICK-TREFOIL	VASCULAR PLANT	T		G5 S2S3		4007365	53
HEMPSTEAD	[illegible]	FREEPORT 404316 733110	M	1919	H	DIGITARIA FILIFORMIS SLENDER CRABGRASS	VASCULAR PLANT	R		G5 S2		4007365	30
HEMPSTEAD	No	FREEPORT 404242 733453	M	1923	H	GENTIANA SAPONARIA SOAPWORT GENTIAN	VASCULAR PLANT	R		G5 S1		4007365	48
HEMPSTEAD	No	FREEPORT 404340 733416	M		H	GLYCERIA CANADENSIS VAR LAXA RATTLESNAKE GRASS	VASCULAR PLANT	U		G5TUQ SH		4007365	52
HEMPSTEAD	Yes	FREEPORT 404301 733121	M	1919	X	HELIANTHEMUM DUMOSUM BUSHY ROCKROSE	VASCULAR PLANT	T	C2	G3 S2		4007365	13
HEMPSTEAD	Same	FREEPORT 404336 733500	S	1992	CD	HELIANTHEMUM DUMOSUM BUSHY ROCKROSE	VASCULAR PLANT	T	C2	G3 S2		4007365	16
HEMPSTEAD	No	FREEPORT 404331 733512	S	1991	C	PASPALUM SETACEUM VAR SETACEUM SLENDER BEADGRASS	VASCULAR PLANT	U		G5T5 S2		4007365	53
HEMPSTEAD	Yes	FREEPORT 404334 733507	S	1992	BC	SCLERIA PAUCIFLORA VAR CAROLINIANA FEWFLOWER NUTRUSH	VASCULAR PLANT	T		G5T4T5 S1		4007365	45

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BIOLOGICAL AND CONSERVATION DATA SYSTEM - ELEMENT OCCURRENCE REPORT, 17 JAN 1996
Prepared by N.Y.S.D.E.C. Natural Heritage Program, Latham New York

(This report contains sensitive information which should be treated in a sensitive manner. Refer to the users guide for explanation of codes and ranks.)

* COUNTY & TOWN	USGS TOPO MAP/ LAT. & LONG.	PREC-ISION	LAST SEEN	EO RANK	SCIENTIFIC AND COMMON NAME	ELEMENT TYPE	NY STATUS	US STATUS	HERITAGE RANKS	OFFICE USE	OFFICE USE
HEMPSTEAD Yes	HICKSVILLE 404532 733423	M	1916	H	SCLERIA PAUCIFLORA VAR CAROLINIANA FEWFLOWER NUTRUSH	VASCULAR PLANT	T		G5T4T5 S1		4007375 15
NORTH HEMPSTEAD Yes	HICKSVILLE 404526 733314	M	1916	X	AGALINIS ACUTA SANDPLAIN GERARDIA	VASCULAR PLANT	E	LE	G1 S1		4007375 4
NORTH HEMPSTEAD No	HICKSVILLE 404638 733557	S	1987	D	ASCLEPIAS VIRIDIFLORA GREEN MILKWEED	VASCULAR PLANT	R		G5 S2		4007375 12
NORTH HEMPSTEAD No	HICKSVILLE 404526 733314	M	1907	H	ASTER SOLIDAGINEUS FLAX-LEAF WHITETOP	VASCULAR PLANT	U		G5 S2		4007375 4
NORTH HEMPSTEAD	HICKSVILLE 404527 733539	M	1895	X	HELIANTHEMUM DUMOSUM BUSHY ROCKROSE	VASCULAR PLANT	T	C2	G3 S2		4007375 3
OYSTER BAY ok	AMITYVILLE 404303 732849	M	1936	H	LINUM MEDIUM VAR TEXANUM SOUTHERN YELLOW FLAX	VASCULAR PLANT	T		G5T5 S2		4007364 2
OYSTER BAY ok	AMITYVILLE 404321 732841	M	1936	H	SCLERIA PAUCIFLORA VAR CAROLINIANA FEWFLOWER NUTRUSH	VASCULAR PLANT	T		G5T4T5 S1		4007364 13
OYSTER BAY Yes	FREEPORT 404422 733127	M	1951	X	AGALINIS ACUTA SANDPLAIN GERARDIA	VASCULAR PLANT	E	LE	G1 S1		4007365 14
OYSTER BAY out	HICKSVILLE 404928 733234	S	1984	C	AMBYSTOMA TIGRINUM TIGER SALAMANDER	AMPHIBIAN	E		G5 S3	ESU	4007375 5
OYSTER BAY Yes	HICKSVILLE 404740 733248	S	1984	D	AMBYSTOMA TIGRINUM TIGER SALAMANDER	AMPHIBIAN	E		G5 S3	ESU	4007375 7
OYSTER BAY No	HICKSVILLE 404731 733243	S	1987	BC	ASCLEPIAS VIRIDIFLORA GREEN MILKWEED	VASCULAR PLANT	R		G5 S2		4007375 1

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COUNTY & TOWN		USGS TOPO MAP/ LAT. & LONG.	PREC-ISION	LAST SEEN	EO RANK	SCIENTIFIC AND COMMON NAME	ELEMENT TYPE	NY STATUS	US STATUS	HERITAGE RANKS	OFFICE USE	OFFICE USE
OYSTER BAY	Yes	HICKSVILLE 404554 733121	M	1896	H	PLATANTHERA CILIARIS ORANGE FRINGED ORCHIS	VASCULAR PLANT	T		G5 S1		4007375 14
OYSTER BAY	Yes	HUNTINGTON 404653 732956	M	1907	X	HELIANTHEMUM DUMOSUM BUSHY ROCKROSE	VASCULAR PLANT	T	C2	G3 S2		4007374 2

5 Records Processed

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SIGNIFICANT HABITATS

DATE : 01/17/96

REPORT ID#	NAME OF AREA	TYPE OF AREA	COUNTY	TOWN OR CITY	QUADRANGLE	LATITUDE (DEG MIN SEC)	LONGITUDE (DEG MIN SEC)
SP 30-031	Hempstead Plains	Rare/Unusual Plant Habitat	Nassau	Hempstead	Freeport	40 43 40	73 35 14
SW 30-516	Cove Road	Tiger Salamander Habitat	Nassau	Oyster Bay	Huntington	40 51 30	73 29 36

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USERS GUIDE TO NATURAL HERITAGE DATA

DATA SENSITIVITY: The data provided in these reports is sensitive and should be treated in a sensitive manner. The data is for your in-house use only and may not be released to the general public or incorporated in any public document without prior permission from the Natural Heritage Program.

BIOLOGICAL AND CONSERVATION DATA SYSTEM ELEMENT OCCURRENCE REPORTS:

COUNTY NAME: County where the element occurrence is located.
TOWN NAME: Town where the element occurrence is located.
USGS 7 1/2' TOPOGRAPHIC MAP: Name of 7.5 minute US Geological Survey (USGS) quadrangle map (scale 1:24,000).
LAT: Centrum latitude coordinates of the location of the occurrence. Important: latitude and longitude must be used with PRECISION (see below). For example, the location of an occurrence with M (minute) precision is not precisely known at this time and is thought to occur somewhere within a 1.5 mile radius of the given latitude/longitude coordinates.
LONG: Centrum longitude coordinates of the location of the occurrence. See also LAT above.
PRECISION: S - seconds: Location known precisely. (within a 300' or 1-second radius of the latitude and longitude given.
M - minutes: Location known only to within a 1.5 mile (1 minute) radius of the latitude and longitude given.
SIZE (acres): Approximate acres occupied by the element at this location.
SCIENTIFIC NAME: Scientific name of the element occurrence.
COMMON NAME: Common name of the element occurrence.
ELEMENT TYPE: Type of element (i.e. plant, community, other, etc.)
LAST SEEN: Year element occurrence last observed extant at this location.
EO RANK: Comparative evaluation summarizing the quality, condition, viability and defensibility of this occurrence. Use in combination with LAST SEEN and PRECISION.
A-E = Extant: A=excellent, B=good, C=marginal, D=poor, E=extant but with insufficiently data to assign a rank of A - D.
F = Failed to find. Did not locate species, but habitat is still there and further field work is justified.
H = Historic. Historic occurrence without any recent field information.
X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location

NYS STATUS - animals: Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.
E = Endangered Species: any species which meet one of the following criteria:
1) Any native species in imminent danger of extirpation or extinction in New York.
2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.
T = Threatened Species: any species which meet one of the following criteria:
1) Any native species likely to become an endangered species within the foreseeable future in NY.
2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.
SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).
P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.
U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.
G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NYS STATUS - plants: The following categories are defined in regulation 6NYCRR part 193.3 and apply to New York State Environmental Conservation Law section 9-1503.
(blank) = no state status
E = Endangered Species: listed species are those with:
1) 5 or fewer extant sites, or
2) fewer than 1,000 individuals, or
3) restricted to fewer than 4 U.S.G.S. 7 1/2 minute topographical maps, or
4) species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.1
T = Threatened: listed species are those with:
1) 6 to fewer than 20 extant sites, or
2) 1,000 to fewer than 3,000 individuals, or
3) restricted to not less than 4 or more than 7 U.S.G.S. 7 and 1/2 minute topographical maps, or
4) listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.
R = Rare: listed species have:
1) 20 to 35 extant sites, or
2) 3,000 to 5,000 individuals statewide.
U = Unprotected
V = Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

NYS STATUS - communities: At this time there are no categories defined for communities.

continued on next page